AUGUST, 1953

BUTANE-PROPANE News

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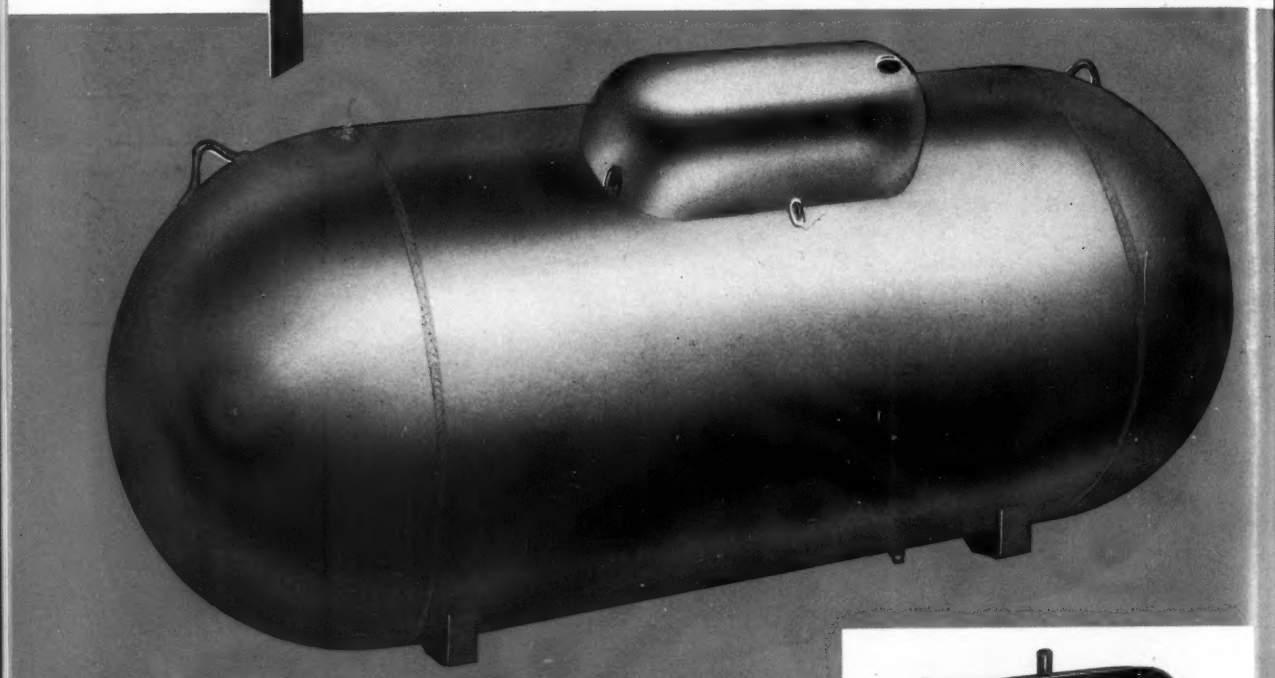
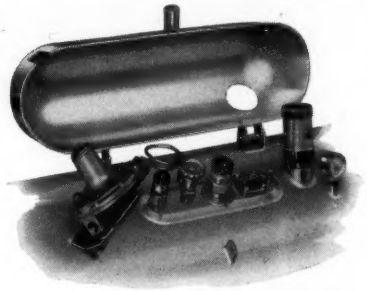


499-Gallon Hackney System



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CONTAINERS FOR GASES, LIQUIDS AND SOLIDS

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LETTERS

Kansas

I have a 1949 Mercury using propane and want to increase the compression ratio to 7:1 or 7:5.

Is there a Ford or Lincoln head that will raise the compression?

How much milling would be necessary to raise the Mercury head to 7:5?

I am only getting 13 miles per gallon against 20 on gasoline.

I am having trouble getting the motor to idle slow.

J.J.D.

The heads from the standard Ford passenger car engine will fit your Mercury, giving a compression ratio of 7.2:1. If you wish to go on up to 7.5:1, you may do so by milling the Ford engine heads .030 in., or by milling the Mercury heads .060 in.

As these heads are milled out to clear the dome top pistons, it will probably be necessary to deepen the concavities to prevent the pistons from striking the heads. You may determine whether or not this is needed by laying the heads in position on the blocks without a gasket, without bolting down, then turning the engine with the starter. If the pistons do not strike the heads, then the clearance after the heads are installed with the gaskets will be satisfactory.

Raising the compression as noted above will increase both the power and the miles per gallon. With 7.5:1 ratio, you may not get quite as good mileage as with gasoline, but it should be fairly close.

Bad idling of this engine may come from a number of causes. We would suggest that you run the engine for a few minutes on gasoline, and see if the idling is any better. If it is equally bad on gasoline, then the trouble is in the engine and not in the L. P. gas carburetor. If so, check for sticking valves, air leaks in manifold, unequal spark plug gaps, and ignition defects.

If the idling is good on gasoline, but poor on propane, the trouble is in the L. P. gas carburetion system, or the gasoline shut-off valve is leaking enough to upset the idling mixture. Check this first by shutting off the propane and seeing if the engine will idle with the gasoline choke set at various positions. If not, check the idle circuit of the carburetor. The fittings at both ends should have openings of approximately ¼ in. The lower end of the idle tube must not be connected to the fitting in the carburetor which connects with the distributor. It should be attached to a special idle plate mounted between the carburetor and the manifold, and connecting with both halves of the intake manifold.

The vent hole in the bottom of the regulator must be open to the atmosphere. We find that these holes are sometimes plugged to prevent the entrance of dirt, but this should not be done, as it affects both the idle and the full power operation.

The recommended idling speed of the Mercury engine is 425 revolutions per minute with gasoline, which would be equal to a road speed in high gear of about seven or eight miles per hour. It should not be expected to idle much lower than this on propane.—Ed.

•

North Carolina

We have a customer who wishes to fire a radiator vat by propane gas. This vat is 10 ft. long, 4 ft. wide and 18 in. deep, although it is usually filled only 12 in. deep. The bottom of this vat is about 2 ft. off a cement floor and is enclosed on both sides and one end with common brick. The vat is made of sheet steel and the bricks go from the floor to the top of vat, and the top is covered with a hinged door made of two layers of ¾-in. pine lumber.

Our customer wants to maintain a temperature of from 180° to 200° in subject vat for about 10 hours a day, and normally cleans about 50 radiators a month.

Will you please furnish us with any information you can on the following?

1. Best method of applying heat to vat.

2. Name and address of manufacturer who can supply burners.

3. Approximate monthly fuel bill with propane selling at 19 cents a gallon.

Our customer has seen a similar vat fired by gas in this manner. The vat had two 4-in. pipes inside of same on the very bottom. These pipes extended through one end of vat and had a gas burner in the end of each one. The other end of these 4-in. pipes elbowed at 90° angle against the other end of vat (on the inside) and extended about 8 ft. up, discharging inside of building.

J.C.B.

The vat your customer has seen, which has the immersion type heating tubes, is a good method of heating the liquid in the vat.

Probably the same burners as those used in the vat your customer saw can be used for propane if the orifice is correctly sized. Some companies which manufacture suitable burners for this type of heating are:

Eclipse Fuel Engineering Co., 711 S. Main St., Rockford, Ill.

Surface Combustion Corp., Toledo 1, Ohio.

When writing for the burners you should give the burner company the details you have furnished us so that it can supply you the proper size of burners and recommend the correct size of tubes. Four-inch immersion tubes may not be correct for your customer's vat and may not suit one type of burner, when they would be correct for another type.

We cannot tell you what your customer's fuel bill would be because there are too many intangibles to permit a good estimate. Perhaps the burner companies can advise you regarding it, as they have more experience with immersion heating jobs.—Ed.

•

Texas

I wish to use butane or propane to run a Minneapolis Moline 55 hp. stationary engine, provided your calculations to me will show me that it is cheaper than natural gas.

Will you transfer the figures I am giving in Table 1 into butane and/or propane cubic feet and into dollars and cents (butane and propane costs), basing your calculations on my condition where these cubic feet are purchased at 75 cents per 1000

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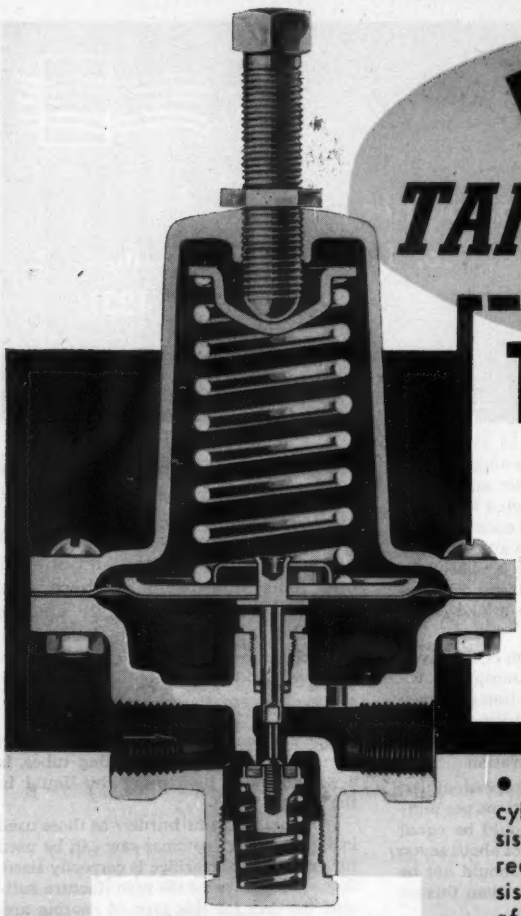

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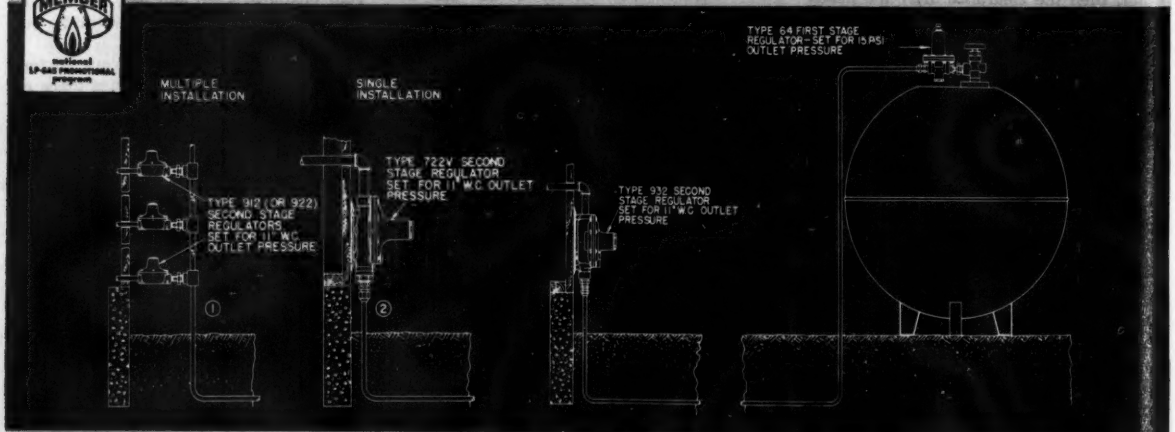
CAPACITY:
600 cubic feet (1,312,000 BTU) per hour or more

CONNECTIONS:
2" female pipe thread

• Circumstances sometimes make it advisable to reduce cylinder or tank pressures in *two "stages"*, the first consisting of either a Type 64 or a high pressure Type 722VH reducing tank pressure down to 10 psi, the second consisting of a Type 922, Type 932, Type 722V, or a group of Type 912 reducing this "intermediate" pressure down to 11" water column.

This *two stage* method can be of advantage in several ways. Properly employed, it permits the use of small piping where tank or cylinder is remote from point of gas use, or where there are multiple dwellings to be served. It has value in reduction of freezing problems. It provides for *constant* appliance pressures under adverse conditions.

MEMBER national LP-GAS PROMOTIONAL program



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cu. ft., and delivered to me at 4 oz. or 6 oz. if I wanted it, and no extra charge for 6 oz., and sold at atmospheric pressure on a flat 75 cent charge? However, I run regularly on 4 oz.

I paid this $483.72 as it became due monthly, but I have been told by several parties that butane and/or the mixture of butane and propane will save me money, so will you please settle this matter for me in a conclusive manner?

Kindly send me all of your data on the new mixer gas system and its saving features, and tell me what I would have to have to run a 55 hp. gas and/or gasoline engine with this new system.

D.S.

It appears there is a slight misunderstanding of the gas company's nomenclature and its interpretation. We believe the gas company bill reads 57.3 M cu. ft., etc. The "M" designates thousands of cubic feet rather than millions and 57.3 M would mean 57.3 thousands or 57,300 cu. ft. This is verified in calculating the bills at 75 cents per 1000 cu. ft. of natural gas.

In converting the natural gas to equivalent cubic feet and gallons of propane on the attached chart, the heating value of natural gas was assumed to be 1050 Btu per cu. ft., propane at 2525 Btu per cu. ft. and 91,600 Btu per gallon.

For example:

(57,300 cu. ft. natural gas × 1050) ÷ 2525 = 23,800 cu. ft. propane.

(57,300 cu. ft. natural gas × 1050) ÷ 91,600 = 657 gal. propane.

Based on the total figures the break even price for propane on an equivalent heating value basis is ($483.72 ÷ 7406 gal.) = $.0652 per gallon. If propane can be delivered for any price per gallon under $.0652 per gallon, you will be saving money, other factors being equal. (See Table 2.)

No information was included in your letters about the type of carburetion or make of engine, nor length of operating periods. A 55 hp. engine will pull about 5.5 gal. per hour when working under full load. For short periods of operation per day a 500-gal. storage tank, when at least one-fourth full, would probably have adequate vaporizing capacity so that a convertor would not be needed.—Ed.

TABLE 1. EXAMPLE FROM 1952

January	I used 57.3 million cu. ft.	cost	$41.98
February	I used 86.2 million cu. ft.	cost	64.65
March	I used 63.7 million cu. ft.	cost	47.78
April	I used 74.0 million cu. ft.	cost	55.50
May	I used 69.8 million cu. ft.	cost	52.35
June	I used 72.0 million cu. ft.	cost	54.00
July	I used 79.6 million cu. ft.	cost	59.70
August	I used 88.1 million cu. ft.	cost	41.68
September	I used 55.0 million cu. ft.	cost	41.68
	645.7		$483.72

TABLE 2.

Month	Thousands of Cu. Ft. Nat. Gas	Cost	Equivalent Propane Thous. Cu. Ft.	Equivalent Propane Gallons
January	57.3	41.98	23.8	657
February	86.2	64.65	35.8	989
Mareh	63.7	47.78	26.4	731
April	74.0	55.50	30.7	849
May	69.8	52.35	29.0	800
June	72.0	54.00	29.8	826
July	79.6	59.70	33.1	913
August	88.1	66.07	36.6	1010
September	55.0	41.68	22.8	631
Total	645.7	483.72	268.0	7406

Wisconsin

We are installing a propane fired gas furnace of 95,000 Btu input, and there is a conventional unlined brick chimney adjacent to the furnace which we plan to use for the vent.

It was decided to use a double walled aluminum vent pipe as it can be installed readily, and we understand the damage that the products of propane combustion do to brick and mortar chimneys. This was more of a consideration than the fast warm-up of aluminum pipe because this is a 32-ft. chimney and always has a strong draft. Main consideration, therefore, was to preserve the chimney.

The owner now wishes to install a gas-fired incinerator and logically it will go in this same chimney. The manufacturer of the incinerator advises against it since the products of combustion may go to 1200° and melt the aluminum pipe.

It will be just about impossible in this house to run a separate vent for the furnace so the incinerator can have use of the chimney. Our question is one of finding a solution. Is there something else that we can line the chimney with that will preserve the chimney and also handle the incinerator?

N.W.F.

Regarding the venting of incinerators, we have made some inquiries to see if we could not come up with a more satisfactory answer to your problem than the one we must give you.

Double-walled stainless steel vent pipe was the answer we had hoped to find, and we are told this is being developed for incinerator service but is not available and will not be so for some time. The aluminum type will not withstand the heat from the incinerator.

It appears that the only flue lining that you can use for the incinerator is a Class A type which is made of fire clay or similar material. These fire clay chimney liners come in a variety of sizes and shapes, and you may be able to find one that you can install in the chimney with which you are concerned. These liners can be found at most building supply houses. The sections should be cemented together with an acid resisting cement.

Such a lining will handle both vents, although it probably will not give as good service on the furnace as your present lining.—Ed.

North Carolina

In your May issue under "Letters," "B.O.", Wisconsin, asks for advice on a safety device which shuts off gas when pressure is too high.

I think he was referring to the "Poly-Trol" safety shut-off valve sold by Handley-Brown Heater Co., Jackson, Mich.

Excessive pressure raises diaphragm, releasing steel ball which stops flow of gas. Also in a fire a fuse melts and does same.

S. L. PAXTON,
Matthews, N. C.

This is valuable information, and we are glad to pass it on to our readers.—Ed.

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BPN Editorial Comment

A NEW NATIONAL PETRO-CHEMICALS CORP. plant near Tuscola, Ill., will remove liquefiable hydrocarbons coming through the Panhandle Eastern pipeline with natural gas. Among other products, they expect to recover 140 million gallons of LPG per year--as much as the entire industry marketed in 1937.

SOME OF OUR GOOD INDUSTRY PEOPLE who are having trouble borrowing as much as 45% on the physical assets of their businesses will not be comforted to note that they are forced to compete with other businesses which are able to borrow 45 times the amount of their wholly-owned assets--and from that on up. The latest financial report of the Rural Electrification Administration shows at least one REA co-op with borrowings as high as 67 times its paid-in capital.

To make the situation tougher, our industry people are not exempted from any of the tax levies which supply the money that supports this competition. They "kick in", along with all the rest of us, or they go to jail. Lovely business, being forced to compete with yourself on terms that you cannot possibly meet.

On this same general subject, our folks down in Kentucky are forced to meet this same REA competition on about the lowest rate scales in the United States, and certainly on the lowest level of ethics that has as yet appeared in the competitive picture. The electrical people are in the fight with all the zeal and fire of crusaders--and they let the truth fall where it may.

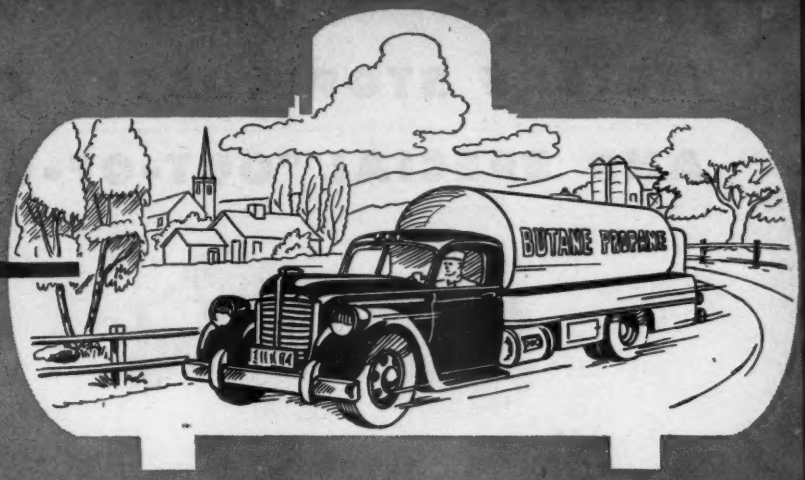
The LPG people have lost all patience with the erring brothers, and are recruiting and drilling their forces for a show-down fight. The Battle of Kentucky will be worth watching.

THE CONVERSION TIDE continues to run strong, with dealers showing increased activity and manufacturers reporting a rising flow of inquiries for orders and equipment. Fleet operators lead the way, as this is one conversion market where savings show up in big, impressive figures.

Proof of the expanding interest in LPG conversion is found in a three column news story appearing in a recent issue of "The Wall Street Journal". The article quoted statistics and case histories covering conversions in various parts of the country. Suffice it to say, the "Journal" has a knack for keeping its finger on the pulse of BIG BUSINESS!

Ed.

BEYOND THE MAINS



Kentucky's Thoroughbred Scores Again

Through the years we have come to expect that every so often Kentucky's most amazing woman, L. P. gas dealer Frances Holliday, will bob up with another display of fortitude and long range planning. She never disappoints her audience.

The sequence started back in World War II. Convalescing after the removal of a tubercular lung, and in urgent need of fresh air and manpower, Frances drove her own delivery truck. With the help of a seventeen year old boy who did the heavy lifting, she saw that her customers in the Kentucky hills did not run out of gas. Later she piloted the organization of the Kentucky L. P. Gas Association, and served as it's president. Her handiwork appears throughout the program that has earned that fine group it's position of eminence among the state associations.

And now, with a running jump, she has driven both heels into the solar plexus of our long-time enemy, Reddy Kilowatt.

For many years the electrical boys have regarded the state universities, agricultural colleges and extension services as their private and exclusive domain, and our industry has accomplished little in correcting that error. Government sponsored and financed rural electrification, and government sponsored and financed advice to farmers and their wives, just seemed to go hand in hand. Graduates of these esteemed institutions, the County Agents and the County Home Demonstration Agents, have helped mightily to bring the "finer things of life" to the homes of rural Kentucky by the power-line route. Rough competition for our industry, we have heard. And we have also heard strong men say, in effect, "It's no use trying to fight the government".

Frances just didn't see it that way. She is not used to being whipped. She got out her woman's weapon, licked her lips to make the words clear, and backed some professors and state leaders into the corner. Frances can be mighty persuasive when she hears the call to a crusade.

Results — at this year's convention, with the consent and blessing of the aforesaid professors and state leaders, the county home demonstration agents were the honored guests of the Kentucky Association, shepherded and fed by the L. P. gas distributors from their home counties. Some of the girls saw, for the first time, the difference between the best modern electrical cookery, with which they were so familiar, and the far better cookery that is available from the more modern, efficient, economical, and convenient L. P. gas range. And there is now the assurance that the use of the modern gas appliances will no longer be a neglected art back at the places where these home demonstration agents are trained.

Now that we have been shown the way, let's see if the big strong men in some of our other kilowatt-ridden states can accomplish what one little woman did in Kentucky.

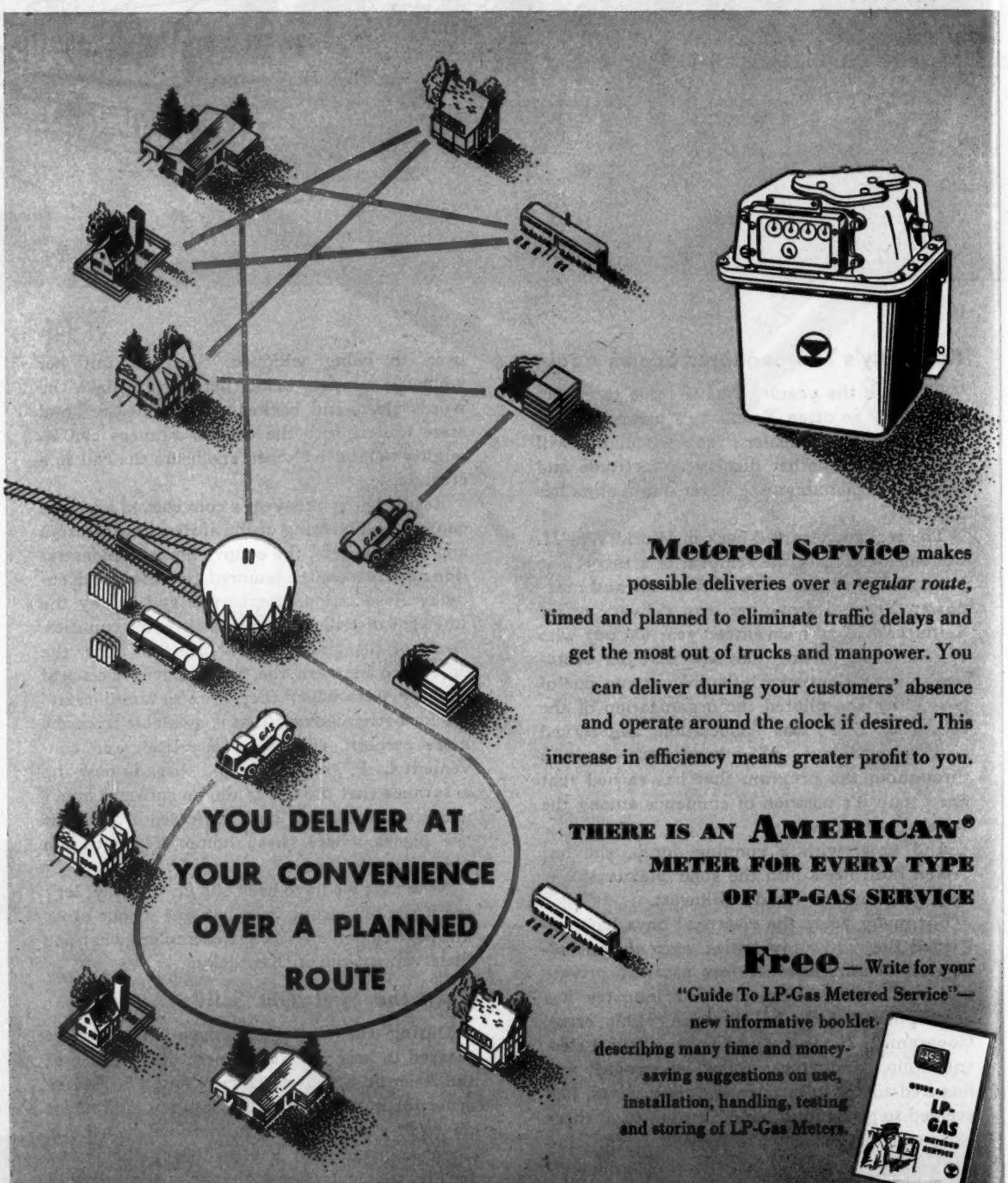
Burn the Fuel You Sell!

During the Chicago Convention we were pleased to hear a leading operator from one of the Atlantic Coast states rebuking a Midwesterner for not operating his delivery equipment on L. P. gas. The man from the East, who is under a penalty of 5 cents per gallon extra freight cost, has found that it pays, and that the drivers like it better than gasoline.

We hope to see the day when operators who do not use the fuel that they sell will be as rare as horses on four lane highways.

Earl Abell

METERS STOP COSTLY CROSS-HAULING AND SPECIAL "OUT-OF-GAS" DELIVERIES



Metered Service makes possible deliveries over a *regular route*, timed and planned to eliminate traffic delays and get the most out of trucks and manpower. You can deliver during your customers' absence and operate around the clock if desired. This increase in efficiency means greater profit to you.

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PART 1

These five vapor meters permit five separate customers to utilize gas from a single storage tank without any doubt of the amount of fuel burned by the

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operating efficiency
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from

Measuring Liquefied Petroleum Gas With Vapor Meters

By Robert A. Johnson

District Sales Manager
Rockwell Manufacturing Co.
Pittsburgh, Pa.

THE growth of the liquefied petroleum gas industry has paralleled that of natural gas, with tremendous progress being made during the post-war years. Due to this rapid expansion the methods of operation have not been developed to obtain maximum efficiency and net profit. Vapor meters will be an important feature in solving this problem as they are watch dog of the gas utility industries.

Through the years metering has proved to be the most satisfactory method of measurement to both buyer and seller. Utilities have demonstrated that the only fair and equitable way to charge is through meter measurement. They know that a metered bill, based on a device the customer can check at any time, wins and holds his confidence by reducing the possibility of error to a minimum.

The "meter plan" not only enables a dealer to provide better service at a lower operating cost, but it puts IPG on a closer par with utility gas service. However, despite the competitive advantage, there are also many money-saving, business-building reasons for installing meters on L. P. gas service.

No "Out of Gas" Worries

While talking about service and convenience to the customer, keep in mind that on a metered basis the customer does not have to read a gauge or watch an indicator to tell he is low on gas, then advise the distributor by phone or letter that a costly special delivery of gas is necessary. On a metered system the customer has no "out of gas" worries since his tank or bottle will be filled when the dealer's simple inventory control indicates the necessity. Also, the customer can increase his storage, assuring him of gas during critical winter months.

Equitable Billing

Most dealers not using meters collect for their gas on delivery. However, on a metered system the customer pays for the gas after he uses it. He does not have his money tied up for two or three months, depending on the amount of his storage. While this is true of the bottle business, the advantage is greater for the tank customer. Also, the customer is billed at regular intervals rather than having to pay a large amount at any given time. This is an important feature when selling a prospective customer on metered service, as one of his main interests is the cash outlay at the time of installation.

A metered service is cheaper since the customer will not be charged for the gas on the initial installation. The sliding rate scale is another feature made possible by metering gas. The more gas used the lower the cost per unit. This falls in line with another advantage in that he pays monthly for his L. P. gas just as he does for his other utilities. Actually he is getting a deal that compares closely to utility service from his L. P. gas dealer.

Speedometer Type Indexes

The customer has a twofold check on the amount of gas used. Not only can he check his consumption against what he used the previous month or previous year but he can also check against a possible error in billing by reading the meter index. This is easy since L. P. gas meters are available with speedometer type indexes. At the same time, since the customer pays only for the amount of gas that passes through the meter, he is not charged for any gas which might escape due to leaks in regulators, pop-off valves and relief valves caused by pressure built up in the tank, bottle or line.

Some companies offer to test the meter in the presence of the customer to convince him of its accuracy. There is a definite trend toward meter proving at predetermined intervals of five, seven or ten years.

Route Planning

In going over the advantages of metering to the distributor, it will be noted that some of the same features we stressed for the customer are also advantages for the distributor.

For example, in a metered system trucks can be routed more efficiently since now a planned delivery schedule can be made beforehand as to the number of stops and the amount of gas to deliver. This is determined by checking meter readings against individual customer storage. By using this method, backtracking is eliminated; and, more important, the distributor determines the needs of the customer, which is not the case in non-metered service.

Two major costs to the distributor are labor and truck expense which include repairs and depreciation. Therefore, for profitable business, a planned distribution program is necessary so that the most gallons of gas and the largest number of cylinders can be delivered in the shortest possible time. This will allow more delivery by the same truck as well as keeping truck expense down to a minimum. By having a planned route two trucks will do the work of three. From the cost standpoint it is very important to know what is the minimum economical amount of gas to deliver.

When the distributor gives the customer metered service he is building up their confidence in his ability to take care of their needs.

No Changeover Problems

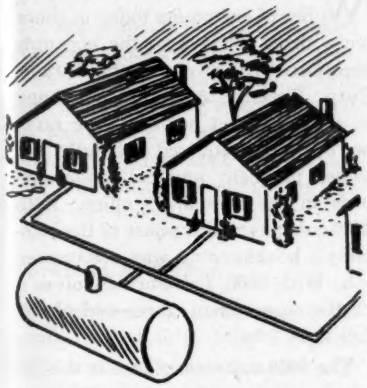
In a bottled system, metering eliminates the automatic changeover problems caused by small amounts of gas being left in the cylinders. This requires credits to be given to the customer, resulting in increased bookwork. The same thing is true on tank customers where the dealer tries to estimate the amount of gas customers will use annually and allows them to make equal monthly payments. If it is a cold year, the customer will owe a large amount of money at the end of the year; and if it is warm year, he is dissatisfied because the dealer has tied up the extra money during the year.

One of the big advantages to the distributor of metering is his ability to balance his supply and demand quota. This is one of the L. P. gas industry's biggest problems since there is usually an oversupply in summer and shortages in winter. Due to his ability to fill tanks and bottles at his convenience, the distributor can enter the winter season with customers storage tanks filled, and by planned deliveries meet the winter peak demands with a minimum amount of expensive "call backs". By the same manner such planned deliveries allow the distributor to use customers' tanks for storage in the summer months, which eliminates the necessity of reducing the selling cost of gas to induce customers not using meters to accept delivery during that period.

This is particularly important to those distributors who are on the 1½ to 1 ratio on deliveries from the refineries. Metered service makes it possible to take advantage of this ratio and keep other dealers from acquiring present customers in the off season. Since the customer pays only for the amount of gas which goes through the meter, no competitive dealer would store gas in his bottle or tank.

Another advantage of meters to the distributor is that the meter constantly checks on leaks. Leaks would be determined by noting the amount of gas consumption in relation to the amount delivered. This protection could result in sizable savings.

When a customer discontinues metered service, you are automatically notified when the meter is disconnected. This gives the dealer a chance to immediately check the reasons for losing a customer.



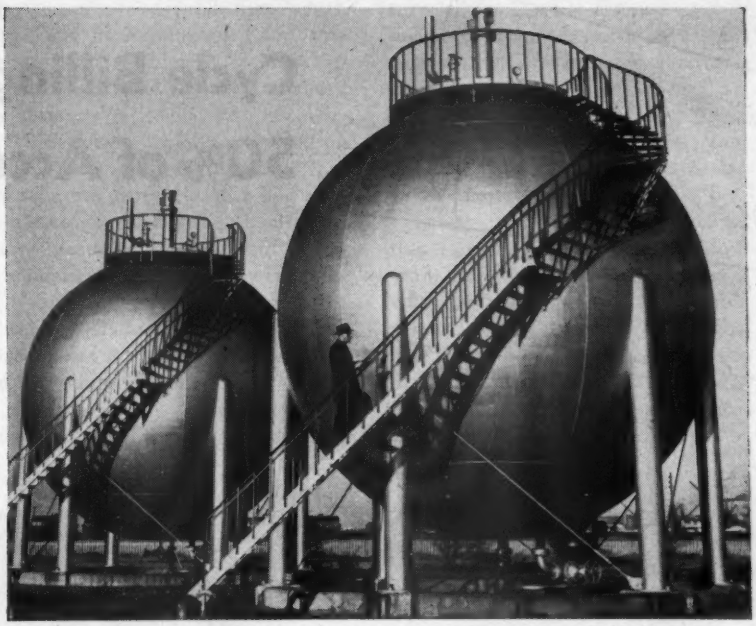
Increased Storage

Increased storage is probably the biggest advantage of a metered service. All dealers have customers with either tanks or bottles in which there is room to store excess L. P. gas. Multiply that storage by the number of customers, and it results in an ample amount of storage space which can be utilized at a big savings over storage at a bulk plant. Besides, the storage is at the customer's property where he can use it if necessary.

Gas meters make it possible to serve two or more customers from a single tank. This reduces installation expense and cuts down delivery time.

Meter Financing

Some businesses use a meter deposit as a means of financing the meters. Besides giving them the capital for meters it also assures them of payment of customers' accounts. Other dealers use some type of an installment plan for purchasing meters. Most people, convinced that a metered operation is the best operation, pay for meters out of revenue just as they would for any other capital expenditure. Regardless of how they finance the purchase of meters they realize they can pay for them through lower operating costs and higher profits.



Spherical tanks hold butane at Grangemouth Oil Refinery in Scotland.

LPG Industry Expanding In Scotland

The bottled gas industry in Scotland is still growing despite the steady expansion of competing fuels. The number of dealers has increased tremendously, service stations expanded and the entire organization improved since 1949, when scarcity of containers hampered development. That situation has been overcome, and the way opened for expansion.

Majority of the dealers are local tradesmen who have other interests and contacts which make them carry large stocks. The extent of the stock varies from 50 to 100 cylinders according to their areas and needs.

Bulk of the consumption is still for lighting, heating and farm purposes, and still in the country areas. But a surprising amount of the business is being done in city fringe areas, beyond the scope of town gas.

In addition to these domestic calls, there has been a steady growth in the use of bottled gas for industrial applications, and this is a field in which considerable developments are possible. The expansion of the refinery industry has increased availability of supplies. In Scotland, for instance, the Grangemouth refinery is giving supplies of butane with a slight isobutane and propane admixture, which is now being distributed widely throughout the Scottish country areas.

The ancient Royal Palace of Linlithgow in Scotland was "spotlighted" with LPG floodlights by Scottish Rural Gas, Ltd., Edinburgh, as a part of the recent Coronation festivities. The palace was the birthplace of Mary, Queen of Scots, and was last occupied by royalty in 1635 when Charles I stayed there.

Cycle Billing System Saves 50% of Accounting Time

By Benedict Kruse

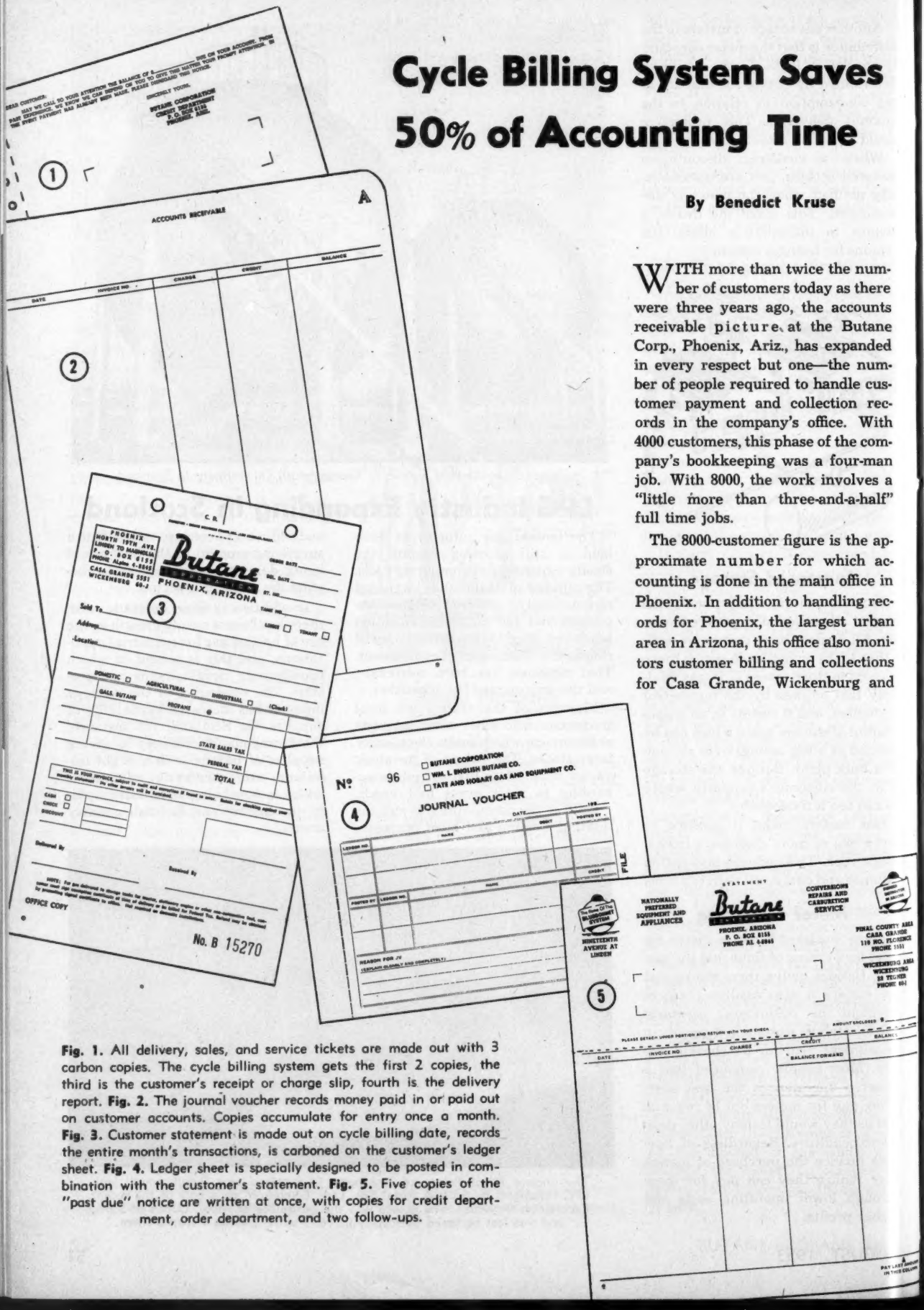


Fig. 1. All delivery, sales, and service tickets are made out with 3 carbon copies. The cycle billing system gets the first 2 copies, the third is the customer's receipt or charge slip, fourth is the delivery report. **Fig. 2.** The journal voucher records money paid in or paid out on customer accounts. Copies accumulate for entry once a month. **Fig. 3.** Customer statement is made out on cycle billing date, records the entire month's transactions, is carboned on the customer's ledger sheet. **Fig. 4.** Ledger sheet is specially designed to be posted in combination with the customer's statement. **Fig. 5.** Five copies of the "past due" notice are written at once, with copies for credit department, order department, and two follow-ups.

WITH more than twice the number of customers today as there were three years ago, the accounts receivable picture at the Butane Corp., Phoenix, Ariz., has expanded in every respect but one—the number of people required to handle customer payment and collection records in the company's office. With 4000 customers, this phase of the company's bookkeeping was a four-man job. With 8000, the work involves a "little more than three-and-a-half" full time jobs.

The 8000-customer figure is the approximate number for which accounting is done in the main office in Phoenix. In addition to handling records for Phoenix, the largest urban area in Arizona, this office also monitors customer billing and collections for Casa Grande, Wickenburg and

Yuma. Through an affiliate organization operating out of Tuscon, the firm offers service to most of its home state. This latter organization, however, handles its office records separately and independently.

The company's basic plan, following the practice of a great portion of the petroleum industry, calls for the drivers to render hand written invoices at the time of delivery. Once a month, each customer with an open item against his account receives a statement.

As the Phoenix concern climbed above the 4000-customer mark, pressures of "the first of the month blues" became strong enough so that they had to look for a means of overcoming the heavy work loads which came with closing accounts and rendering statements.

Workload Is Spread

It was formerly a practice on accounts receivable to keep a control ledger card up to date for each customer. As charges came in for fuel deliveries, merchandise sales or service charges, the customer's ledger card was withdrawn and the charges posted against it. As customer payments were made, the cards were withdrawn once again and posted accordingly. On the first of the month, then, all customer files were checked and statements were rendered for all which had charges pending.

With its new accounts receivable system, the Phoenix firm has accomplished the dual purpose of spreading its workload throughout the month and of eliminating approximately two-thirds of its machine posting operations.

The new plan is a cycle billing system worked out especially for the needs of the L. P. gas distributor.

To start with, all of the firm's delivery, sales and service tickets have been worked out on four-part forms which allow enough copies for all interested parties. Using the delivery ticket as an example, the driver gives the third copy to the customer as a receipt or charge slip, keeps the fourth copy for his own delivery records, and sends the first two into the office. The first copy then becomes the permanent file record, set up alphabetically according to the invoice date. The second copy goes to the accounts receivable files, which are kept in Remington Rand safe ledger trays fitted with visible margin Kollect-A-Matic pockets for easy reference.

These ledger trays are divided alphabetically and geographically into 16 separate groups, each billed on a separate day of the month. No machine postings are required for individual customer sales or payments. These media are "posted" merely by dropping them in the control file pockets set up to handle the records of individual customers.

On the proper cycle date, the ledger tray containing records to be billed for the period is rolled alongside the Burroughs posting machine on which the statements are prepared. This is accomplished easily because the ledger trays are on casters.

Blank statements for customers to be billed on a given cycle date are headed in advance on Addressograph machines and arranged in proper order for the posting machine operator.

In filling out the statements, the operator picks up any old balance due against the account, then individually lists any invoices charged against it or payments credited to it during the current month, producing a new balance due figure at the bottom of the statement. All machine entries on the statements are, in turn, carboned onto the corresponding account ledger card. A carbon copy of the two-part customer statement is retained in the proper accounts receivable file pocket, while the original, together with supporting bills and payment vouchers, is mailed to the customer.

The system of sending customers this second copy of their invoices with their statements has been a valuable factor in making possible prompt collections. These copies, signed by the customers themselves in most cases, usually settle all arguments and answer all questions at a glance.

All machine entries connected with a given account are handled in the same "once-a-month" posting operation. On the proper cycle date, the safe ledger tray containing accounts to be billed is wheeled to the posting machine.

The office staff at the Butane Corp. proves its figures for every cycle group at each billing period. This is done by balancing the accumulated totals kept by the posting machine with a control ledger which tallies a running score of charges and credits for each cycle billing group. As invoice copies or payment information media are broken down daily for filing in the cycle billing pockets, adding machine totals are run and balanced for each group. These figures, then, are entered in a control ledger kept especially for balancing against month-end figures. On the cycle billing date, charges and credits accumulated during the month are totaled. These must balance with figures developed by the posting ma-

"Posting" to customer accounts is done by dropping the charge or credit media into the proper control pockets. Each of the safe ledger trays represents the accounts handled on a separate cycle billing date.

chines before the customer statements are mailed.

The company's tight credit control system over accounts receivable swings into operation ten days after invoices are mailed. At this time, the customer files are inspected to discover which accounts have not been paid up to date. For those which still have outstanding amounts due, a four-part, marginally punched past due notice is prepared. This is a notice which informs the customer that his account is past due and lists the amount involved. The customer's name and address is typed in a space which adapts the form for window envelope mailing.

When the past due notices are first mailed out, ten days following the cycle billing date, the original copy is sent to the customer and the remaining three are filed in his account control pocket. When the amount is brought up to date, these extra copies are removed.

Five days later, or 15 days after the cycle billing date, the files are inspected again. If a customer still has not paid his account, copy number two is withdrawn and mailed to him. This process is repeated a third time if the account still has not been cleared up in five more days, making a total of three past due notices where necessary. If an account has still not been paid up five days after the third notice has been mailed, the fourth copy of the past due form is sent to the company's order department with instructions that the account is to be put on a C.O.D. basis.

All told, the cycle billing method outlined above has enabled the Butane Corp. to reduce its average bookkeeping time by at least 50% without sacrificing customer control or accounting efficiency.

This new 5000 gallon transport trailer, was recently put into operation by the Pyrofax Gas Co., a division of Union Carbide and Carbon Corp. It will be used to carry "Pyrofax" Gas from producing and shipping points to several of the company's 42 filling stations. The trailer is the largest permitted under New York state laws.

Weekly LPG Display Yields Dealer Huge Prospect List

By Albert S. Keshen

IF the customer can't conveniently come to the dealer, then the dealer should go to the customer. This basic merchandising principle is paying off for Garden State Propane Gas Corp. of Lake Hiawatha, N. J.

This firm has a display booth every Wednesday night throughout the year at the nearby Pine Brook Auction Market which draws a throng of from 15,000 to 20,000, all anxious to look over merchandise and pick up bargains in what is virtually an outdoor department store. Taking advantage of this interest, the dealer has set up an attractive miniature showroom which highlights appliances of seasonal interest, and finds that he is building up a prospect list which might not have been obtainable otherwise.

"We feature water heaters in the fall, ranges in the spring, and so on," explains Leo Zuckerman, general manager, "although we generally like to have one model of our leading lines on hand all the time. These are hooked up for a working demonstration and we can at least make a showing to a good part of the public which ordinarily does not come to our showroom. It stimulates buying interest and we cash in on this by taking down names and addresses for calls at every opportunity."

Garden State always has at least two trained salesmen on hand to meet the folks and answer inquiries. For those showing immediate interest, appointments are made on the spot; others who express only cursory interest are handed a prepaid return postcard on which to check off the items they need and mail it in later with a notation as to the best time for a man to call. Besides this, the spectators are also given the usual manufacturers' literature and other detailed data.

The idea is working out so well that the corporation is preparing to extend its activities in this field, as it covers a territory throughout most of north Jersey. Similar booths are also being considered for the many county fairs, military post shows and other civic affairs which are held in the various communities from time to time.

These outdoor shows are the principal means of promotion used, although a series of small ads is carried in many of the nearby weeklies. Newspaper copy is based on a humorous sketch supplied from a syndicate and pertaining to some facet of the business.

Garden State handles a full line of appliances, but gets its major income from its gas supply service. It sells 100-pound cylinders for residential uses, with a growing market, as well, in bulk gas for commercial installations from metered-off trucks to plants, diners and restaurants. In addition, the company serves 30 smaller dealers out of its bulk plant in Parsippany, filling these dealers' tanks in bulk, and is also a distributor of gas ranges and water heaters.

Loading platform at Parsippany bulk plant with assortment of 50 to 300-lb. cylinders. Man holding tank is Harvey Selcer, plant manager.

Men Divide Sales Efforts

The sales effort is spearheaded by two trained men, one specializing in retail accounts, the other with thorough engineering and installation training. The retail man is interested primarily in new construction projects which are likely to become regular propane customers. He watches the Dodge building reports closely, visits new building developments, and inspects municipal building reports. Many leads also come from

tips supplied by builders, electricians, plumbers, carpenters and other tradesmen. These people are assured of flat commissions if the leads produce business.

The engineer-salesman covers a wider territory. He is qualified to give technical advice on installations and as a result finds a ready welcome. Among his favorite customers are trailer parks using 500-gallon bulk plants equipped with hand-operated pumps to fill the 20-pound cylinders of individual trailer owners. Also, dealers are making LPG conversions on engines and larger industrial users who need tanks up to a capacity of 1800 gallons.

Supplies Truck Terminal

Garden State supplied three 500-gallon tanks for Tooley's Truck Terminal in Jersey City, which is the first gas station in the state permitted to fill trucks with propane gas. There a Smith pump and Neptune meter are installed.

The firm operates one delivery truck on L. P. gas, a converted L-172 International of 1800-gallon capacity, and plans to convert the entire fleet of two transport trucks and four 1200-gallon delivery trucks to similar power.

Delivery trucks leave the bulk plant every morning, and average about 30 stops. Accounts are visited regularly on refills and timed to minimize the likelihood of shortages by customers.

The service department is headed by Raymond Vanderhoof, service and operations manager, who has a crew of four or five men exclusively on service and installation. On new accounts the men are required to fill out a detailed work order (Fig. 1) incorporating recommendations which are passed on to the service manager. When complaint calls come in, the office manager fills out a repair order (Fig. 2) which is passed on to the serviceman so that he will have a preliminary guide before making his visit.

All servicemen and employes at the plant have been thoroughly trained in their work by attending the LPGA service schools and undergoing detailed instructions from their department heads.

REPAIR ORDER

No. 608 Date .....

Name ..... Date Required .....

Address ..... Floor Furnace .....

Gas Range ..... Others .....

Water Heater .....

Refrigerator ..... Charges .....

Remarks .....

Customer's Signature ..... Signatures .....

Date Completed .....

Fig. 2.

WORK ORDER

No. 441 Date .....

Date Required .....

Name ..... Address .....

..... City .....

.....

.....

OUTSIDE EQUIP.	APPLIANCES
Tank	Gas Range .....
Reg.	Water Heater .....
Auto.	Refrigerator .....
Manual	Floor Furnace .....
Pigtail	Space Heater .....
Base	Other .....
Other	Work Completed ..... Date .....
Meter	Remarks: .....
Customer's Signature	Signature .....

Fig. 1.

Trade-Ins Build Sales

An effective and profitable method of accepting and disposing of trade-ins has enabled the company to build up its appliance business. Used gas ranges particularly are handled in large numbers as credit for new merchandise, reconditioned if necessary on the premises, and then sold.

Leo Zuckerman, general manager, with Raymond Vanderhoof, service manager (right), discussing increasing the 2-inch liquid line to 3-inch to accommodate filling additional tank truck.

"As competition becomes more keen, the value of a trade-in becomes more important to the salesman as well as to the owner," Mr. Zuckerman asserted. "We have eventually obtained many deals that possibly might have been lost to competition if we had not properly estimated the true value of the trade-in. This happens in our store almost every week

Garden State is always plugging water heaters in local newspaper ads.

and we are confident that many of the deals we make are possible because we are able to provide the customer with a used piece of equipment."

New Showroom This Spring

More of this business, as well as increased sales for new appliances, developed when the firm opened its new showroom in the spring of 1953 alongside its bulk plant, abandoning the present wooden building showroom and office. The bulk plant at Parsipanny, three miles away, holds 18,000 gallons and is equipped with a Brunner compressor and a transfer pump. It is planned to install an additional 30,000-gallon tank at the same location soon.

L. P. gas is shipped from Newark, which is about 30 miles away, by transport from the Warren Petroleum Corp. plant.

Garden State is now arranging to distribute a plumber's melting furnace made exclusively for its use. This fixture fits on top of a 20-pound tank with flange type valve and is powered exclusively by propane. The unit operates on tank pressure only with no regulators. Dealers in the New York metropolitan area will be supplied under contract.

One of Garden State's modern delivery trucks.

The Garden State firm was established in May, 1940, and was incorporated in 1950, with the following officers: Benjamin Resnik, president; Leo Zuckerman, general manager and secretary-treasurer; Harvey Selcer, plant manager; and Mrs. Adra Wittman, office manager. The firm employs 11 people.

New York Dealer Expands With New Plant

By George E. Toles

Tisdale's, for many years a leading service station in Niagara Falls, N. Y., got its first taste of the bottled gas business back in 1947 when Mark Tisdale, founder of the firm, started selling bottled gas to accommodate trailer customers.

Recently, Tisdale's entered the LPG field on an all-out basis, discontinuing its service station and opening one of the most modern bottled gas stores in upstate New York. Located just outside the city limits of Niagara Falls, the new building features deep display windows which provide street traffic with an excellent view of the interior floor displays.

The new store and warehouse is adequate enough to meet needs of the firm for many years to come, and the five acres of surrounding land provides plenty of room for further expansion.

Setting back about 50 ft. from the road, the store provides plenty of off-street parking space immediately in front of the entrance and offers a big advantage over the firm's former downtown location where parking space was at a premium.

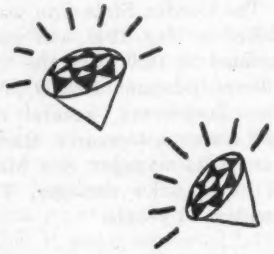
The new building, measuring 50-ft. by 35-ft., has a cylinder storage dock at the rear, and a bulk plant for filling 20-lb. cylinders will soon be in operation. A 500-gal. tank located on one side of the structure provides bulk storage for LPG.

Public demand for household installations of bottled gas began to press Tisdale's for a change in policy about four years ago and the old service station was remodeled. At first the firm used only its own cars. Then it purchased a small trailer, a used ¾-ton truck and in 1951 it purchased a new 1½-ton truck with a special body to carry up to 48 100-lb. cylinders.

As the propane business expanded and began to conflict with operation of the service station, Tisdale's decided to sell out its downtown property and abandon the service station phase of the business. The move permitted Mark Tisdale, the founder, to retire, and William E. Tisdale and John M. Tisdale, the sons, to carry on with the new bottled gas store and warehouse.

In Two Parts
PART 2

Acres of Diamonds in Your Own Backyard



By Malcom M. Scott
Ruud Manufacturing Co.
Pittsburgh, Pa.

NOBODY can give you a packaged sales story on L. P. gas water heaters that will deliver results automatically. The sales story that will get results for you is the one based on your own knowledge and convictions, developed by your own experience, sharpened and made effective by actual sales contact.

Each sales story must among other things present the advantages of L. P. gas hot water service and its superiorities over competitive fuels and water heaters.

The fundamentals here outlined are of great importance—the foundation on which you build your own sales story.

Sell the Service Advantages

Automatic hot water service is easy to sell. Everybody wants it when they know what it will do for them.

All family members of all ages use it—bathing, shaving, shampooing, massaging and hand-washing are only a few of the uses. Everyone is personally inconvenienced when hot faucets run cold; everyone enjoys more comfortable living when those faucets live up to their label. Hot water is an *all-around-the-family necessity!*

Hot water is an essential housekeeping service. Its failure in dishwashing, laundering and cleaning means fatigue and inconvenience for the chief homemaker. Its reliability lessens labor, speeds up housework and adds to the homemaker's work-free time. Hot water is an *all-around-the-house necessity!*

Greatest need for hot water generally comes during certain hours, but the special needs of accident or sickness may come at any time, and failure in these emergencies may be serious, even to loss of life. Hot water is an *all-around-the-clock necessity!*

Hot water knows no season. It's needed in winter and summer, the whole year 'round. A hot bath cures the winter sniffles. A warm bath in summer keeps you cool. Hot water is a spring cleaning must. It's a big help in fall back-to-school days. Hot water is an *all-around-the-calendar necessity!*

Every home appliance has its advantages, but it's doubtful if any of them offer as many advantages as the automatic gas water heater. If your customer has a clear understanding of them, the sale is quicker. This list will make them easier for you to remember. Explain these advantages to your customer but translate them to fit him, his name and family.

Points to Talk About

CONVENIENCE. There are over 150 uses for hot water in the home and only about five for cold water, yet cold water flows automatically at the turn of a faucet. If cold water is automatic, why shouldn't hot water be automatic? To have it in hit-or-miss style is *inconvenient*; to have it *there* at your finger-tips whenever you want it, every hour, minute and second of the day and night is *real convenience.*

CLEANLINESS. It's possible to keep your hands, face, body, dishes, laundry, windows, tables and floors clean with cold water, but only when you add *muscle* power, and that's the

hard way. Hot water cleans as much as 20 times faster and easier; it substitutes heat for muscle-power and does a better job. If hot water shows the short and easy way to cleanliness, certainly the machine that furnishes it automatically and economically should be in every home.

BEAUTY. The country's annual bill for beauty is in the millions. If you don't believe it, check over the beauty advertisements in your magazines and newspapers. Many a woman will go to any length to attain or retain beauty and yet forget that the first step in all beauty treatments is hot water, most reliably at hand with usable temperatures with an automatic gas water heater.

HEALTH. If a person doesn't have health, he wants it; if he has health, he tries to protect it. The importance of hot water bathing is well established by medical and other authorities. Required temperatures vary according to the bath to be taken, and temperature control is easy with an automatic gas water heater which supplies instant, abundant and economical hot water at the right base temperature.

HOUSEWORK. Labor-saving appliances are many and all are helpful, but there is none in any home that performs as many chores as the automatic gas water heater. Dishwashing, laundering, cleaning, scrubbing and stain-removal are but a few of a score or more ways that an automatic gas water heater will lighten the burden of housekeeping. No waiting, no watching, no going without.

RECREATION. No woman wants to make a drudge of herself. Even if she enjoys housework, there's a limit to her endurance. Recreation hours are most necessary, and an automatic gas water heater, by helping get the work done faster and with less labor,

"Working" wife wants "hot water".

Babies make "hot water" a must!

adds many joyful recreation hours to be had in no other way.

NO LABOR. Analyze all the things necessary in the operation of a non-automatic water heater; it's a big price to pay for an unreliable service. Endless steps . . . weary labor . . . wasted time . . . constant thought . . . frayed nerves. An automatic gas water heater needs no steps, no labor, no time, no thought. It starts and stops itself; it's 100% *automatic.*

FIRST-AID. Automatic gas hot water has saved many a life because it's *there* when needed as it often *is* needed in case of sickness or accident. For emergency service alone, every home should have an automatic gas water heater. It's a small price to pay for *security.*

UP-TO-DATE. There's no doubt about it! Automatic gas hot water is *up-to-date.* It's quick where other water heaters are slow, generous in its supply where others are stingy, clean where others are dirty, reliable where others are not. It's safe, economical and *good-looking.* Gas is the modern way to heat water.

Tailor Story To Prospect

Go even further to suit your sales story to the specific prospect. Make your story his story by following these hints:

1. *If there is a baby in the house,* tell the prospect that a baby requires twice as much hot water as a grown-up, — that for it too, regularity of bathing and exact water temperatures are many times more important, — that an automatic water heater assures the right quantity of hot water at the right temperature at the right time.
2. *If one of the family is quite old,* bring forward the importance of hot water instantly ready for all emergencies. Emphasize, too, the danger of scalding where the water heater has no automatic temperature control.
3. *If there are "run-about" children,* call attention to their talent for collecting dirt, the need of instant hot water for frequent baths and for the many clothes that must be washed. Cleanliness is the basis of health, — for children as well as grown-ups.
4. *If there is a young girl in the house,* stress the beauty appeal,— that a clean skin and clean clothes are beauty essentials,—call attention to a young girl's natural love of cleanliness and an abundance of hot water. The bathroom is still the busiest beauty parlor in town.
5. *If the woman does her own housework,* she surely needs the help of this low-cost mechanical servant that gives her an abundant stream of instant hot water to shorten the tasks of dishwashing, laundering and cleaning. She's too busy a woman to waste her time running up and down stairs.
6. *If there are servants,* automatic hot water service will make them better servants, permit them to do their work in shorter time and in more thorough fashion, — will make them better satisfied with working conditions.
7. *If the wife works outside the home,* housekeeping hours are limited and she needs every possible labor-saving device, of which the automatic water heater is the greatest. She certainly has no time to play valet to a non-automatic water heater.

"Hot water" keeps roomers happy.

Smoky area demands "hot water".

8. *If the husband is a traveling man,* he need not carry with him a mental picture of his wife shoveling coal and carrying ashes if he installs an automatic water heater —nor one of hot water failure because of power failure.
9. *If the husband is a commuter,* he'll quickly recall the countless cold shaves and baths he has taken because he "couldn't wait for the tank to heat."
10. *If the husband is a mechanic* or works with his hands in other ways, he'll surely appreciate the hot, cleansing bath that awaits him each evening. Remember, the truest words ever spoken are, "You can't be clean without hot water." This man needs hot water and plenty of it.
11. *If the wife is a nervous type,* tell her tactfully that hot baths are prescribed by specialists for this condition. A hot bath tones up the skin and tunes down the nerves.
12. *If much entertaining is done,* there are so many details to handle that It surely is unwise to add another —heating water. Many a house-guest remembers the cold bath after he's forgotten the warm welcome. Then, too, entertaining means more dishwashing and general housework; automatic hot water provides a much-appreciated short-cut.
13. *If the prospect is well-to-do,* it's proper to emphasize specially the modernness of automatic gas-heated water and the high-quality of the machine you have to sell. Mentioning the names of other well-known people that have automatic hot water service is especially appropriate here. You have the "best there is" to sell; let the prospect know it.
14. *If "roomers" are taken,* it is certain they'll stay only if they are comfortable. Automatic hot water service is one of the greatest of all home comforts. Cold water flowing from hot faucets has caused many a roomer to change his address.
15. *If the house is in a smoky section,* hot water becomes doubly important. More cleaning must be done in this home and it becomes a back-breaking chore unless hot water flows instantly and automatically.
16. *If the neighbors have automatic hot water service,* bring this fact into the conversation casually and watch for the effect on the prospect. Remember, that all neighbors are not good friends but on the other hand, if they are, their recommendation has a high sales value.
17. *If you know of owners of automatic water heaters* in the same profession or business as the prospect, the mention of their names will generally help.
18. *If the prospect is a merchant,* or someone with whom you have done business personally, be sure he knows it.
19. *If it's a rented home,* always point out that the automatic water heater is as portable as an electric floor lamp or a gas range. The matter of disconnecting the piping, moving the unit and re-connecting it is really a very simple matter.

Sell L. P. Gas Superiority

Seldom is a sale made without the competition of another fuel.

Many times—too often—this reduces itself to a straight comparison of fuel costs without consideration of the differences in quality of the competitive hot water services.

L. P. gas is a clean, automatic fuel. It requires no labor, no attention, no thought. Its water heating speed is fast, at least three times faster than any other automatic method. Because it is a flexible fuel, water heaters can be designed—and are—to operate with stepped-up Btu input, greater than conventional input, and so increase the water heating speed or Recovery Rating.

A small L. P. gas water heater because of the heat-speed of the fuel can do a big job—take care of all personal hot water demands and handle all household needs including the very special ones of the modern automatic clothes-washer and dish-washer. No jumbo-sized storage tanks are needed with LPG.

Fast heating speed gives the LPG water heater a Recovery Rating far greater than any other fuel. Use all the hot water in the storage tank and in one hour or less it will again be full of top-temperature water. No other fuel can do this.

Competitive Fuels

Coal is not an automatic fuel. There is no equipment designed for its use that entirely eliminates human thought, attention and labor. The fuel requires large storage space. Temperature cannot be automatically controlled. Heat losses are high because storage tanks may build up excessive temperatures if insulated. Coal makes dirt, soot and grime. It heats up the house in summer. Heating rate is slow—too slow to meet modern hot water demands.

Oil in general is a better water heating fuel than coal, but not to be compared with gas. It generates odors and oily vapors. Oil water heaters need operating attention and require periodical maintenance attention.

The electric water heater is automatic and needs no attention. Its greatest drawback, and one that loses many a sale to the automatic L. P. gas water heater, is its slow water heating speed (Recovery Rating) and lack of operating flexibility. Recovery Rating of the gas water heater is three to four times faster than electricity, in some cases as high as six times faster.

Slow heating makes large storage tanks necessary. Hot water requirements are generally figured on a daily rather than an hourly basis as with L. P. gas water heaters. Common practice is to heat water at night and store it against the day's demands. The electric water heater is handicapped by design restrictions—

Gas heats three times faster than electricity.

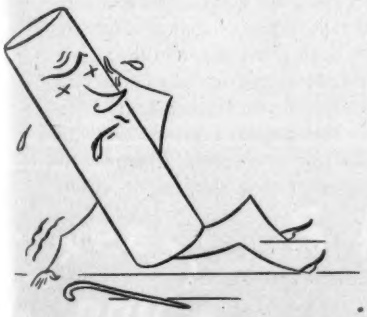
the heating rate is not flexible as with the LPG water heater which can be designed for a wide range of Btu inputs.

With an electric water heater, if the owner wants to be safe and have enough hot water for average use and occasional extra demands, he must buy a jumbo-sized water heater at high initial cost.

If he buys a size suitable for average needs, extra demands (guests, sickness, emergencies, canning, house-cleaning, family growth, purchase of new equipment requiring hot water) may exhaust the hot water supply early in the day, so that later demands cannot possibly be met by the slow-heating electric water heater.

The shortcomings of the electric water heater have been specially spot-lighted by the growth in popularity of the automatic clothes-washer. This modern appliance has very specific hot water quantity and temperature demand, and laundering result (soil removal, whiteness retention and bacteria destruction) suffer greviously when the water heater cannot keep pace. The only possible way the electric water heater can serve the automatic washer is with extra-sized and extra-cost models or by housewife adoption of a plan to wash only one or two laundry loads a day and cutting down drastically on other household uses of hot water during the laundering period. In the average home, it's impossible to wash all the laundry in one day unless the housewife is willing to tolerate the poor results caused by lukewarm wash water.

The laundering difference between the L. P. gas and the electric water heater is that the L. P. gas water heater owner *washes when she wishes* and the electric water heater owner *wishes when she washes!*



Electric water heaters have slower "recovery rate".

As with the laundry, so it goes all over the house. Sell the speed of L. P. gas and translate it with housewife terms — performance, convenience, cleanliness, comfort, easier and better housework —and you're well on your way to a sale.

So in your comparison of LPG with competitive fuels, never forget that quality of hot water service is what the housewife wants to know about, what she really buys. Superiority of service can offset most operating cost differences, when if ever they exist.

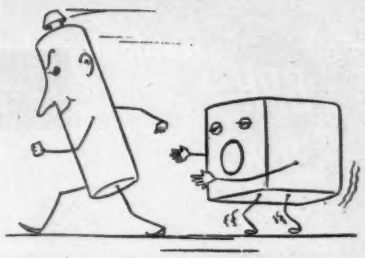
What Does "Off-Peak" Mean?

But even though *"What do I get?"* is vital in the purchase of any commodity, "What do I pay?" is a natural question and often asked when the two only fully-automatic water heaters — L. P. gas and electricity — are being compared.

Certainly the question cannot be answered by glittering generalities or by a magical engineering formula. The variables are too many and too complicated. Promotional rates of greater or lesser degrees of complexity are practically as numerous as L. P. gas and electric companies. Costs vary sharply with hot water quantities used and, with electricity at least, in the time of its use. The greatest confusion of all is without doubt caused by the electric "off-peak," night-heating rate.

The term as generally used implies a single and special rate, and a low one. But in the tortuous processes of salesmanship, the one-cent or the cent-and-a-half "off-peak" rate often becomes so impressed on the prospect's mind that he believes all the hot water he will use will be at that rate. This is, in most cases, very far from the actual fact.

If all the hot water used were billed at the off-peak rate, costs could be accurately measured — cost-per-gallon if a water meter is installed, cost-per-person, cost-per-day, or any other wanted figure. In such a system, water would only be heated during the off-peak, night-time hours. The night-heated supply would be the 24-hour, day-and-night supply, a that's-all-there-is supply without renewal and without relief in case it's exhausted. The obvious solution is that a very large electric water heater be installed, one large enough to heat and store in one heating period, all the 24-hour requirements for the home.



Gas water heaters keep ahead of "washer's" demands.

In such a situation, the average family might limp along with a 66-gal. water heater, but a high percentage would need an 80-gal. or larger size to have a hot water service worthy of the name.

Figures giving size classifications of all electric water heaters in use have never been published, but those for 1951 and 1952 sales reveal that in these years, only 15.2% of all electric water heaters sold had a tank capacity greater than 55 gals.

Two-Rate System Is Costly

The conclusion is obvious. Practically all the electric water heaters in use today use the two-rate system: (1) the "off-peak" (lower) rate for night-time water heating, and (2) the regular or household (higher) rate for water heated in other than "off-peak" hours. Since the usual "off-peak" period is between 10 p.m. and 6 a.m. (eight hours), and is controlled by a time switch, it follows that any water heated during the remaining 16 hours is a costly operation.

The typical installation is a water heater so sized, connected and controlled that some of the energy usage takes place during the "off-peak" or night-time hours. A separate or "off-peak" combination meter measures the special-rate consumption of the water heater's lower or primary heating element during the "off-peak" hours, and current consumed during the remaining hours is routed through the regular household meter at regular household (higher) rates. A time clock serves as "dispatcher" to route the current through the proper meter. Time and duration of "off-peak" periods, and the hook-ups of the two heating elements vary with different utility companies, but the general principle is as explained.

In the majority of installations, only the lower, primary element can receive current at "off-peak" cost and

(Continued to page 126)

Suggested Program for Safety Meeting

1 — Complete the attendance record, noting any absentees.

2 — Report on what has been done in regard to the handling of safety suggestions made at previous meetings. Cover all that have not been disposed of previously. Don't forget to give personal credit to the individuals who made the suggestions.

3 — Discuss new safety suggestions and problems connected with the plant, equipment, and customer installations.

4 — Discuss "Let's Make Every Heating Installation Safe", which appeared in the July issue.

5 — Announce date, subject, sources of material, and study assignments for the next safety meeting.

DISCUSSION GUIDE FOR "Safe Heating Installations"

1. Heating problems differ widely in different parts of the country. This is due primarily to climatic conditions, but economic factors also enter into the picture. Thus, there will be a higher percentage of central heating plants in northern latitudes where bulk fuel is available at moderate cost, but in the moderate climates of the South, in areas of low average income, and in the Northeastern section where fuel costs are high and most L. P. gas is delivered in cylinders, most house heating with L. P. gas is confined to small room heaters. In discussing the problems presented on page 73 of the July issue, in relation to the answers which appear on page 75 of this issue, your own judgment must guide you in selecting the problems on which your main emphasis should be placed.
2. In the near future, the Safety Series will be devoted to two other lines of activity which are of great importance in the operation of an L. P. gas business — Safe Driving, and the prevention and control of L. P. gas fires. We suggest that you ask the men to begin assembling pertinent material on those two subjects, giving them whatever experience your company may possess to point out the importance of these phases of safety to every member of the staff. If your insurance coverage is so written that the costs of motor vehicle and plant fire insurance can be separated out, it would be impressive to give these figures.
3. While discussing safe driving of company vehicles, how about considering these matters:

   If your company does not conduct such a campaign leading to awards in the form of either financial considerations or recognition, this would be an appropriate time to review the progress of the campaign, and give a summary of the results.

   If your company does not conduct such a campaign, but evidence indicates that it might be needed, why not begin discussions in the safety meeting to formulate a program of safe driving awards, to be based on suggestions submitted by both the employe group and the management? This program should begin with a goal to be attained, and a plan for its attainment.

The subject for this meeting is a big one. The chairman should be alert to keep the discussion moving fast, so all necessary points can be covered within the specified time.

Let's make SAFETY Everybody's Business

Let's make every VENTING Installation Safe

SAFETY ★ BPN ★ PROGRAM

SAFETY MEETING

Date _____

Time _____

Place _____

The poster on the other side of this page is for your use in announcing the Safety Meeting covering

"Let's Make Every Venting Installation Safe"

(See opposite page)

Fill in date and hour of your meeting, and pin on bulletin board.

* ***Another poster comes next month.***

Let's make SAFETY Everybody's Business

SAFETY BPN PROGRAM

The material in this discussion is based upon LPGA pamphlet 1, Sections 23 through 28, on Pages 21 through 27.

Let's make every VENTING INSTALLATION safe

By Carl Abell

THE purpose of the vent is to conduct the products of combustion from the firebox of the appliance to outside air, so they will not contaminate the atmosphere in the occupied quarters of the building in which the appliance is operating.

When any hydrocarbon fuel (gas, gasoline, oil, etc.) is burned, the hydrogen and carbon which it contains combine with oxygen in the air to form, in about equal quantities, carbon dioxide and water vapor. If combustion is incomplete, on account of a shortage of oxygen (or too much fuel for the available oxygen), some of the carbon gets short-changed, and comes out with half of its quota of oxygen in the form of carbon monoxide.

Carbon dioxide is harmful to humans only if it has replaced the oxygen in the air in such quantities that the body suffers from oxygen deficiency. Carbon monoxide is an active poison, which the body can tolerate only in limited amounts. It is highly unstable, and combines rapidly with additional oxygen to form carbon dioxide.

Carbon monoxide can be formed by any fuel which burns under conditions of oxygen deficiency. It is present in the exhaust of almost all automobiles when the engines are idling, or at any other time when operating on a "rich mixture." In a confined space, such as a closed, single car garage, it presents a serious hazard. With the entrance door open, the same garage becomes quite safe, because of the rapid dispersion of the carbon monoxide. Great quantities of carbon monoxide are discharged on our public streets, but it is very rare for traffic officers to develop any serious effects from their constant exposure to the traffic fumes.

These same considerations apply to the burned gases coming out of L. P. gas appliances, and they are the principles on which most of the recommendations and regulations governing venting of appliances are based. Thus, small appliances used in fairly large rooms which have normal ventilation do not make either carbon dioxide or carbon monoxide fast enough to create a health hazard.

Ranges and clothes dryers, while they sometimes consume fuel in considerable quantities, are almost always used under conditions which provide ample ventilation for replacement of the oxygen supply, and for dilution, dispersion, and conversion of the carbon monoxide. In the case of appliances consuming more than 50,000 Btu per hour, and smaller appliances used in restricted space, the possibility of accumulating toxic amounts of carbon monoxide is regarded as serious enough to justify venting. These are the primary reasons for paragraphs 1 and 2 of Section 23, LPGA Pamphet No. 1, and the succeeding notes.

While carbon monoxide is the principle health hazard attending incomplete combustion, it might be well in passing to look into two other chemical reactions of combustion. If you will put a broad utensil made of bare metal over a gas flame and adjust the air shutter to restrict the input of primary air to the burner (produce incomplete combustion) and hold your face in the burned gas, you will find that you cannot cut the air supply very much below "maximum heat" until you are aware of a sharp odor which stings the nasal passages, and causes the eyes to smart. This indicates the production of "aldehydes," a series of compounds similar to formaldehyde, and directly parallel to the irritating fumes which frequently come out of the exhaust pipes of buses and trucks when decelerating in city traffic.

Obviously, if aldehydes are being formed in any quantity, they should not be discharged into an occupied room. Their presence might not do any actual harm, but no one has yet given a good reason why we should live with them.

The other product of combustion that we should consider is water vapor. Few people realize the extent to which water is formed in all processes of combustion. With the petroleum hydrocarbon fuels, one gallon of fuel will form a little more than one gallon of new water that never existed before. We only see it when it condenses, as when the clouds of

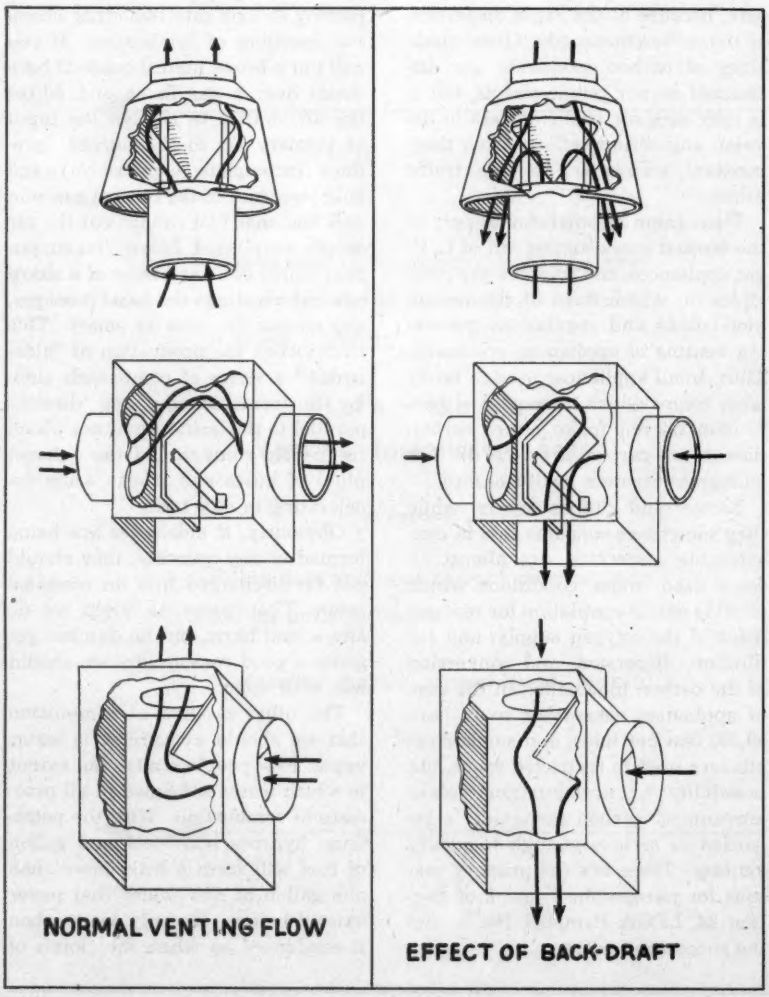
white vapor come out the tailpipes of our automobiles when we start them on a cold morning, and when the condensation in the tailpipe drips out on the driveway, or in the "vapor trails" of jet planes as they pass through layers of nearly saturated cold air in the heavens.

While water of combustion is not directly harmful, it may promote corrosion in vent pipes, and it sometimes condenses inside houses in damaging quantities, particularly in humid climates and cold weather. Wet walls are not pleasant. Such an excess of moisture may damage furniture and affect clothing.

Ample ventilation will take care of any of these situations except condensation of water vapor in connection with the operation of heaters designed for single rooms. But some people may not know about the importance of ventilation, and others may not be physically able to regulate ventilating apparatus. Hence, we have paragraph 3 of Section 23, mentioned in last month's assignment, which recommends that vents be provided for heaters in sleeping quarters for transients, and in institutions where infants, the aged, and the infirm may live.

It is also recommended that unlisted appliances having flue collars should be vented. That makes sense. They have either not been tested by the AGA Laboratories, or have failed to pass the test. Rather than take a chance that we can adjust them so the fumes are harmless, let's get rid of the fumes.

It also says in the book that gas fired incinerators should be vented.



Schematic drawings of vertical, horizontal, and right angled draft hoods showing normal flow of combustion products and spilling due to down-draft.

LPGA Recommended Good Practice Rules for Liquefied Petroleum Gas Piping and Appliance Installations in Buildings

23. Venting of Appliances

(a) Appliances shall be flue connected, or otherwise vented to carry off the products of combustion, in accordance with the following:

1. Any domestic appliance with input rating in excess of 50,000 Btu per hour.

2. Any appliance with input rating in excess of 5,000 Btu per hour, if the input rating exceeds 30 Btu per hour per cubic foot of room or space in which the appliance is installed. Where two or more appliances are installed in the same room or space, then the aggregate input rating of unvented appliances shall not exceed 30 Btu per hour per cubic foot of such room or space.

Note 1. Domestic gas ranges and domestic clothes dryers are excepted from the provisions of rules 1 and 2 above and are not included in arriving at the ratio of input rating to space or room content.

Note 2. Where the room or space in which the appliance, or appliances are installed, is directly connected to another room or space by doorway, arch-way or other opening of comparable size, which cannot be closed, then the volume of such adjacent room or space may be included in the calculations of Rule 2.

3. Room heaters in sleeping quarters for use of transients or in institutions, such as Homes for the Aged, Sanitoriums, Convalescent Homes, Orhpanages, etc. Such heaters must be equipped with an automatic pilot.

4. All space heating steam and hot water boilers and warm air furnaces, floor furnaces, recessed heaters, unit heaters and duct furnaces. (Not wall heaters—See Appendix A).

5. Unlisted appliances having flue collars.

6. Gas-fired incinerators.

24. Draft Hoods

(a) Every vented appliance, except incinerators, dual oven type combination ranges, and units designed for power burners or for forced venting, shall have a draft hood. If the draft hood is not a part of the appliance or supplied by the appliance manufacturer, it shall be supplied by the installer and in the absence of other instructions shall be the same size as the appliance flue collar. (For suggested general dimensions for such draft hoods, see Figures 3, 4 and 5).

(b) Where the draft hood is a part of the appliance or is supplied by the appliance manufacturer it shall be installed without alteration in accordance with the manufacturer's instructions. In the absence of manufacturer's instructions the draft hood shall be attached to the flue collar of the appliance or as near to the appliance as conditions permit. In no case shall a draft hood be installed in a false ceiling, in a different room, or in any manner that will permit a difference in pressure be-

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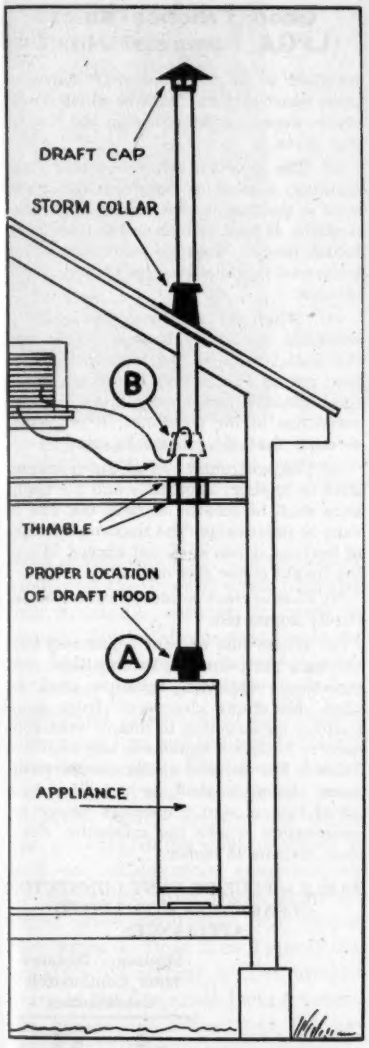

The draft hood should be located as near the appliance as possible, (A), never in an attic or separate room where a different pressure may exist, (B).

You cannot burn trash without making smoke, and if garbage is added, the odor becomes very bad. One soup bone in the incinerator will convince the most skeptical that gas incinerators should be vented.

And now we come to "draft hoods," Section 24. A draft hood is a section, open to the atmosphere and including a one-way baffle, which is set into the vent pipe close to the appliance. It allows the burned gases to flow up the flue without interruption. It diverts the main strength of any downdraft out into the room instead of into the appliance. It allows the burned gases to flow out into the room in case the flue becomes plugged. It is of interest in connection with both safety and comfort, as it protects against blowing out the pilot, and against smothering of the fire if the vent should become clogged.

Paragraph 24 (b) brings out the point that the draft hood should be located as close to the appliance as possible, and that under no circumstances shall it be located above a false ceiling, or in a different room, or in the attic, where there might be a difference in pressure. At first glance it would seem desirable to do it the other way around. If we are trying to get rid of products of combustion, and the required equipment is such that burned gases might spill from the vent on the way out, why not put the draft hood somewhere besides in the room with the appliance? To understand this we need to know a little more about the action of a vent.

Air moves through a flue because it is hotter, therefore lighter, than the air outside. It moves fastest where it is hottest—down close to the fire. As it moves on up the flue, it loses heat and slows down. It is most likely to pass through the draft hood without spilling out if it is moving along at a good brisk pace. The farther from the source of heat we place the hood, the less chance there is avoiding leakage.

Looking at it from the other end of the flue, in case we have a downdraft, it is opposing the natural tendency of the heated gases to rise through the flue. There is more upward force to oppose the downdraft where the flue vapors are moving fastest—down by the appliance.

Now let's see what happens if we place the draft hood in the flue where it passes through the attic. Nearly all attics are equipped with ventilators, and under certain wind conditions it is easier for air to get into the attic than out. This creates a higher pressure in the attic than exists outside. The draft hood, if located in the attic, would offer a means of relieving the excess pressure. If the pressure differential in the attic exceeds the force of the gases moving in the vent, we can then have a downdraft condition which blows the burned gases right back down the flue.

Thus we see that on all three counts the place where the draft hood functions best is next to the appliance, where the power that moves

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tween the draft hood relief opening and the combustion air supply.

(c) A draft hood shall be installed in the position for which it was designed with reference to the horizontal and vertical planes and shall be so located that the relief opening is not obstructed by any part of the appliance or adjacent construction.

(d) Where the installer must supply a draft hood of special design, advice of the local gas company or the proper administrative authority as to its use should be secured.

25. Types of Flues or Vents

(a) Type A flues* or vents* shall be employed for venting:

1. All incinerators.

2. All appliances which may be converted readily to the use of solid or liquid fuels.

3. All boilers and warm-air furnaces except where the proper administrative authorities approve the use of Type B gas flues or vents.

(b) Type B gas flues* or vents* shall be used only with approved gas appliances which produce flue gas temperatures not in excess of 550°F at the outlet of the draft hood when burning gas at the manufacturer's normal input rating and not specified by 25 (a) to be vented to Type A flues* or vents*.

(c) For the purpose of this provision listed appliances, with the exception of incinerators and conversion burners may be accepted as producing flue gas temperatures not in excess of 550°F at the outlet of the draft hood.

*See Appendix A.

(d) Chimneys, flues or vents installed for use with gas appliances but which are not suitable for solid or liquid fuels, shall be plainly and permanently labeled: "This flue is for use of gas burning appliances only."

The label shall be attached to the wall or ceiling at a point near where the flue or vent connector enters the chimney, or, where a Type B gas flue or vent is used in place of a chimney, at a point near where the Type B gas flue or vent or the flue or vent connector enters the wall or ceiling.

(e) Type C gas flues or vents shall be used only for runs directly from the space in which the appliance is located through the roof or exterior wall to the outer air. Such flues or vents shall not pass through any attic or concealed space nor through any floor. Installation with reference to clearance to combustible construction and passage through wall or roof shall comply with provisions of 26 (g) and (h) 1.

26. Flue or Vent Connectors

(a) The material used for the flue or vent connector shall be resistant to corrosion and be of sufficient thickness to withstand damage. Where a question arises as to the suitability of a particular material, the proper administrative authority should be consulted.

(b) The flue or vent connector shall be

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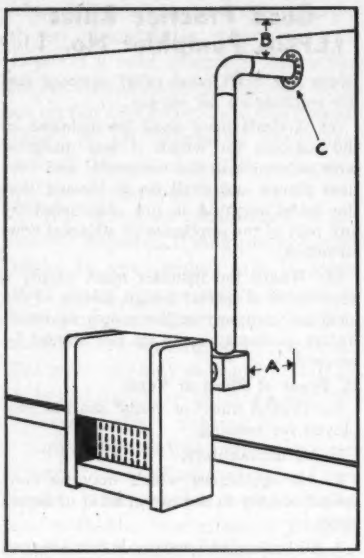

Combustible construction is protected against overheating by the flue, by maintaining safe distances (A and B), and by using a ventilated thimble (C) where flue passes through wall or ceiling.

the gases up the flue is greatest.

Vents handle heated gases. They must not only conduct them to the outside air—it is also necessary to prevent overheating of adjacent combustible construction during the process. In this problem we have three factors—the heat of the gases, the insulating value of the flue, and the separation of the flue from adjacent combustible construction. We also want the vent to provide permanent safety, so we are interested in the materials from which it is constructed, and their resistance to deterioration due to the products and conditions of combustion. These problems are all covered in Sections 25 and 26.

Vents are classified as Types A, B and C, according to their materials and design. These are defined as follows:

Type A Flue or Vent. Flues or vents of masonry, reinforced concrete, or metal smoke stacks.

Type B Flue or Vent. Vent pipng of non-combustible, corrosion-resistant material of sufficient thickness, cross-sectional area, and heat insulating quality to avoid excess temperature on adjacent combustible material, and certified by a nationally recognized testing agency.

Type C Flue or Vent. Flue or vent piping of sheet copper of not less than No. 24 U. S. Standard gauge, or of galvanized iron of not less than No. 20 U. S. Standard gauge, or of other approved corrosion-resistant material.

Paragraph (a) of Section 25 covers the venting requirements of appliances in which the flue gas temperature is likely to be excessively high, or which may reach peaks beyond the temperatures which would be produced by consuming the normal amount of gas in the appliance. These units produce a higher fire hazard than the appliances which reach the peak exhaust temperature from burning the specified input of gas, so their vents must be masonry or equivalent, to protect the surrounding woodwork from possible ignition.

Where it can be certain that the heat produced in the exhaust gases will be limited by the Btu input of the appliance, it is possible to design the appliance so the flue gas temperature will remain below a certain figure. The desirable maximum is given as 550° F. One of the important requirements for listing with the AGA approval is that the flue gas temperature shall not exceed this figure with the burner operating at full input. The Class B flues and vents are made with an insulating value sufficient to handle the flue gases of the listed appliances in accordance with Table 5 of Pamphlet 1, and remain well below the temperature that might cause ignition of the adjacent woodwork.

The final safety precaution in the separation of the flue from combustible construction is where it passes through a wall or partition. Ventilated thimbles are required, which keep the hot flue a safe distance from the combustible structure. Here again the Type B vent enjoys a great advantage, on account of the built-in insulation which it provides.

State and local regulations are "all over the map" in their requirements for venting appliances. While the LPGA Pamphlet 1 makes certain very logical recommendations for the selection of venting equipment for the various types of appliances, they are widely ignored in local building codes, so it is necessary for those who make the installations to know the local codes, some of which seem to have been written by bricklayers.

Where applicable, the Type B vents probably do the best job of any of the three. The best flow through a vent is obtained when the temperature of the escaping gases remains

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installed so as to avoid short turns or other constructional features which would create excessive resistance to the flow of flue gases.

(c) The flue or vent connector shall maintain a pitch or rise from the appliance to the flue or vent. A rise as great as possible, at least ¼ inch to the foot (horizontal length) shall be maintained. The horizontal run shall be free from any dips or sags.

(d) Wherever sufficient headroom is available, appliances having a horizontal flue outlet shall be provided with a vertical run of flue or vent connector before the horizontal run. To minimize frictional resistance in the connector, it is recommended that 45° elbows be used.

(e) The horizontal run of the connector shall be as short as possible and the appliance shall be located as near the flue or vent as practicable. The maximum length of horizontal run shall not exceed 75% of the height of the flue or vent.

(f) Flue or vent connectors shall be securely supported.

(g) Where flue or vent connectors pass through partitions of combustible construction, ventilated thimbles shall be used. Minimum clearances from combustible construction to flue or vent connectors for listed appliances are shown in Table 5. For unlisted appliances the minimum clearance shall be 9 inches from metal flue or vent connectors except for incinerators where the minimum clearance shall be 18 inches.

TABLE 5. FLUE OR VENT CONNECTOR CLEARANCES FOR LISTED APPLIANCES

Appliance	Minimum Distance from Combustible Construction	
	Metal Flue or Vent Connectors	Type B Flue or Vent Connectors
Boiler	6 in.	1 in.**
Warm Air Furnace	6 in.	1 in.**
Water Heater	6 in.	1 in.**
Space Heater	6 in.	1 in.**
Floor Furnace	9 in.	3 in.*
Incinerator	18 in.	Not Permitted

**Except as otherwise specified in the listing by a nationally recognized testing agency.

*3 inches for a distance of not less than three feet from outlet of the draft hood. Beyond three feet the minimum clearance is one inch.

The clearance from metal flue or vent connectors to combustible construction may be reduced as specified in Table 6 where the combustible construction is protected in accordance with this Table.

(h) Flue or vent connectors other than Type B, shall not pass through any com-

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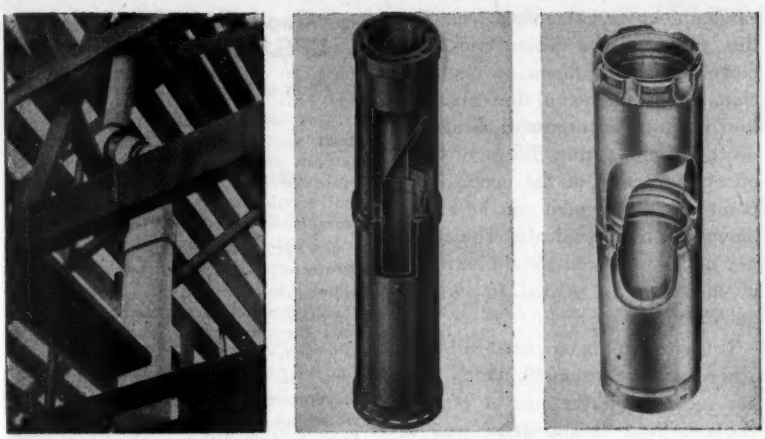


Examples of U. L. approved Type B flues, of asbestos insulating material, or double wall air insulated metal construction. (A) Transite; (B) Metalbestos, by William Wallace Co.; (C) Amerivent, by American Metal Products Co., Inc.

most nearly uniform. The insulating quality of the Type B vents provides this minimum cooling of gases in transit. Brick chimneys do not make the best gas appliance vents as far as action goes, although they are considered necessary for applications where the flue gas temperatures are abnormally high. The gases cool off too much in going through the brick chimney, which impairs the action and on cold, damp days is likely to lead to considerable condensation. To get away from these disadvantages, some installation men like to run liners of Type B or Type C material in the chimneys. The temperature of the flue gases from a vented gas heater are lower than for any other fuel. Condensation in an unlined brick chimney will damage mortar and may penetrate to inside walls.

You will note that in the definitions of the three types of vents, emphasis is placed on the use of noncorrosive materials. This leaves out the old, black stove pipe which has been used for generations. Plain iron stove pipe was not too good with the old wood and coal stoves, which produced a maximum of smoke and a minimum of moisture. It had to be replaced frequently as holes developed from corrosion—mostly from the inside. The moisture content of products of combustion of fuel gases is very high, and iron stove pipe is even more unsuitable. Even in localities where codes permit its use, or where codes are ignored, it should never be used.

Section 26 deals with methods of installing flues and vents, and connecting them to the appliances so they will do the jobs for which they are intended. Much of this material seldom shows up in local codes, but it is all good common sense. Beginning in paragraph (g), we find the recommended specifications for clearances between the vents and combustible construction, and for shielding of surfaces which are close to vent connectors so fires will be prevented. Here again, it is necesssary to watch the local codes. Where they are not specific, at least the minimum specifications of Pamphlet 1 should be followed.

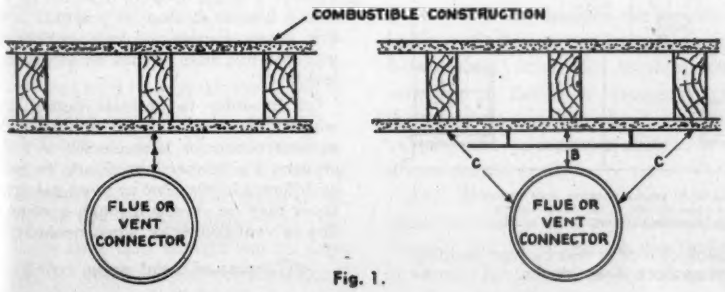


Fig. 1.

Good Practice Rules (LPGA Pamphlet No. 1)

bustible walls or partitions unless they are guarded at the point of passage by ventilated metal thimbles not smaller than the following:

1. For listed appliances, except floor furnaces and incinerators—4 inches larger in diameter than the flue or vent connector, unless there is a run of not less than 6 feet of flue or vent connector in the open, between the draft hood outlet and the thimble, in which case the thimble may be 2 inches larger in diameter than the flue or vent connector.

2. For listed floor furnaces and all unlisted appliances, except incinerators—6 inches larger in diameter than the flue or vent connector.

3. For incinerators—12 inches larger in diameter than the flue or vent connector.

(i) The flue or vent connector shall not be smaller than the size of the flue collar or the size of the outlet of the draft hood supplied by the manufacturer of a gas-designed appliance. Where the appliance has more than one flow outlet, and in the absence of the manufacturer's specific instructions, the flue or vent connector shall equal the combined area of the flue outlets for which it acts as a common connector to the flue or vent. (See Fig. 1).

A equals the required clearance with no protection as specified in Table 5.

B equals the reduced clearance permitted in accordance with Table 6.

The protection applied to combustible construction is required to extend far enough in each direction to make C equal to A.

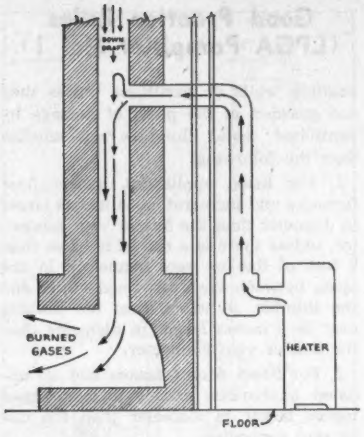
TABLE 6. CLEARANCE WITH SPECIFIED FORMS OF PROTECTION

Type of Protection	Where the required clearance with no protection is: 6 In. Clearance Reduced to	9 In. Clearance Reduced to	18 In. Clearance Reduced to
¼ in. asbestos millboard spaced out 1 in. with noncombustible spacers	3 in.	6 in.	12 in.
28 gauge sheet metal on ¼ in. asbestos millboard	2 in.	4 in.	12 in.
28 gauge sheet metal spaced out 1 in. with non-combustible spacers	2 in.	4 in.	9 in.

(j) No manually operated damper shall be placed in any flue or vent connector. Fixed baffles ahead of draft hoods are not classified as dampers.

(k) A flue or vent connector shall not be connected to a chimney flue having a fireplace opening unless the opening is permanently sealed.

(Continued next page, col. 3)



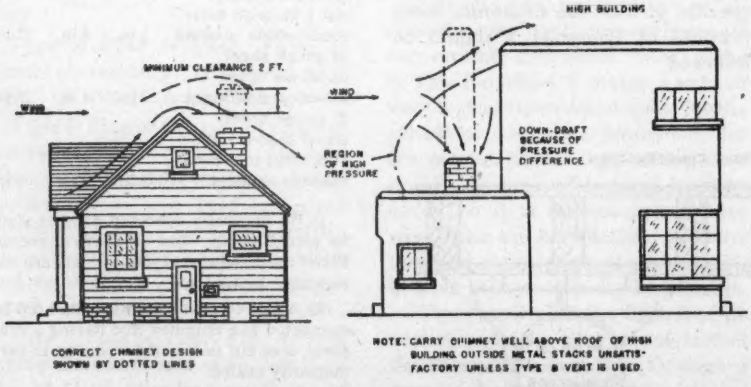
Appliances should never be vented into a fireplace chimney unless the chimney can be sealed below the vent connection.

Paragraphs (j) and (k) of Section 26 are more important than their size would indicate. Either a damper or an unsealed fireplace opening could completely nullify the purpose of putting a vent on an appliance, the damper by creating back pressure which might put out the fire, and the unsealed fireplace by allowing the room to fill with products of combustion.

Section 27 gives the verdict of experience in connecting appliances with existing chimneys, and in constructing vents where there are none of previous construction. It is all good information, and should be understood and followed. Paragraph (c) of this section emphasizes the importance of extending the flue up to a proper height in relation to the surrounding structures. In constructing this extension, it is well to bear in mind the idea that the outgoing gases should be kept moving as fast as possible. If the extension of the flue outside the building is made of single-thickness galvanized iron, the flue gases will be cooled and their movement slowed down, so in severe climates this method of flue construction is quite unsuccessful. Sluggish draft through a thin flue may even offset the action of the vent to the point where the pilot can be easily blown out by downdrafts. The chimney or its extension should be made of insulated material to its full height.

This situation is emphasized in another way in Section 28, which does not recommend the use of outside vents if there is any other way to do the job. It gives additional prominence to the points already mentioned—that the material shall be highly resistant to the corrosive action of combustion products—that it shall be insulated or of high insulating qualities to aid draft and minimize condensation.

The final sentence is one of the most important—"a suitable vent cap which does not obstruct or reduce the effective cross-sectional area of the flue or vent outlet shall be placed on top of the riser." While this is the only mention of vent caps in Pamphlet 1, and its application is specifically to "outside flues or vents" (those passing up the outside walls of buildings instead of going up through the structure and roof), most building codes do not differentiate between these and any other vent or flue. They generally require an approved cap on any flue, and in many cases the local authorities do the approving. We will go along with the authorities on the need for caps on all flues for gas burning appliances. They should be of such nature that they not only keep out the rain,



Chimneys or vents should extend above the peak of roof or nearby high building to prevent conditions which might produce down-drafts.

Good Practice Rules (LPGA Pamphlet No. 1)

27. Flues or Vents

(This section applies only to natural draft venting. Forced draft or exhaust systems and power burners usually require special engineering and installation and should be approved by the proper administrative authority).

(a) Before connecting a flue or vent connector, the flue or vent shall be examined to ascertain that it is properly constructed, clear, and will freely conduct the products of combustion to the outer air.

(b) The flue or vent to which the flue or vent connector is connected shall be of a size not less than specified in Figure 6. In no case shall the area be less than the area of 3 inch diameter pipe. When more than one appliance vents into a flue or vent, the flue or vent area shall be not less than the area of the largest flue or vent connector plus 50 per cent of the areas of the additional flue or vent connectors. An elliptical flue or vent may be used, provided its flue gas venting capacity is equal to the capacity of round pipe for which it is substituted.

(c) The flue or vent should extend high enough above the building or other neighboring obstruction so that wind from any direction will not strike the flue or vent from an angle above horizontal. Unless the obstruction is of great magnitude, it is usual experience that flue or vent extended at least two feet above flat roofs or two feet above the highest part of wall parapets and peaked roofs within 30 feet will be reasonably free from down drafts. (See Figure 7).

(d) In entering a chimney flue, the connection shall be above the extreme bottom to avoid stoppage. Means shall be employed which will prevent the flue or vent connector from entering so far as to unduly restrict the space between its end and the opposite wall of the chimney. A thimble or slip joint may be used to facilitate removal of the flue or vent connector for cleaning.

(e) Cleanouts shall be of such construction that they will remain tightly closed when not in use.

(f) An automatically controlled gas appliance connected to a flue which also serves equipment for the combustion of solid or liquid fuel shall be equipped with an automatic pilot. A gas appliance flue or vent connector and a smoke pipe from an appliance burning another fuel may be connected into the same flue through separate openings, or may be connected through a single opening if joined by a Y fitting, located as close as practical to the flue. If two or more openings are provided into one flue they should be at different levels.

(g) In order to promote better draft where more than one gas appliance flue or vent connector is connected to a flue or vent, the connections should be made at different levels. Two or more gas appliances may be vented through a common flue or vent connector when necessary, if

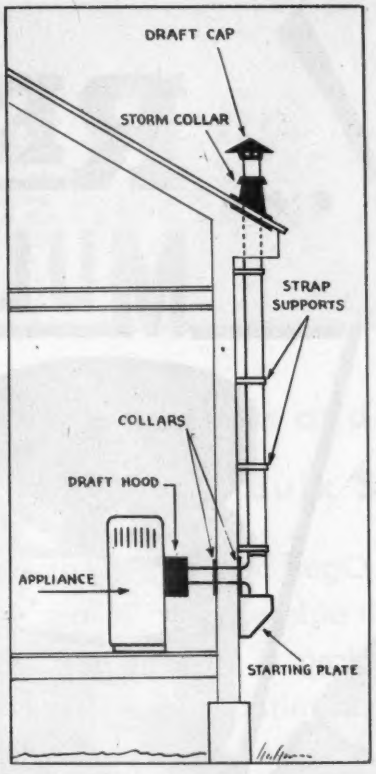
(Continued next page, col. 3)

but should also discourage downdrafts so as to minimize the possibility of blowing out pilots on cold, windy days, when heat is needed most urgently.

New Revisions Coming

During the coming years we will see certain revisions of practices and codes based on recent studies of venting principles by the Stanford Research Institute. These are in addition to the studies made by University of Illinois and Purdue, which have been our principal guide in the past. These changes will be largely in details aimed to make the vent system a little more efficient by reducing internal resistance and maintaining flue gas temperature to speed up its evacuation and reduce condensation. A brief discussion of these research findings was published in "Butane-Propane News," Dec., 1952 (page 87). The indicated changes are not radical in any sense, but where consistent with local codes they may be incorporated in practice at any time.

From the safety standpoint, venting of appliances is getting rid of products of combustion which might otherwise accumulate to the extent that they would be harmful to human health. It must be done in such a way that it does not impair or render hazardous the operation of the appliances, and so it does not involve the risk of starting a fire in a combustible building. We are still learning how to improve the construction and operation of vents, but these safety requirements are not changing. As in any other branch of our operation, we should never incur an avoidable risk by doing the job wrong.



How many improvements can you suggest in this vent installation?

Good Practice Rules (LPGA Pamphlet No. 1)

joined by Y fittings as close as practical to the flue or vent, and provided the size of the common flue or vent is sufficient to accommodate the total volume of flue gases. Y fittings shall be made so that the angle at which the flue or vent connectors intersect is as small as possible, and should not exceed 45°.

(h) Where an existing chimney is unlined or where local experience indicates that flue gas condensate might be a problem, consult the local gas distributor for information about liners that are suitable for the locality.

28. Outside Flues or Vents

(a) Outside flues or vents are not recommended and they are particularly unsuccessful in severe climates and in small sizes, but when they must be used the material shall be resistant to the action of combustion products and shall possess high insulation qualities or be adequately insulated to minimize condensation and aid draft.

(b) When a flue or vent must be installed on the outside of the building, it shall be securely supported. A capped "tee" shall be installed at base of the riser, with an opening to drain off condensate. A suitable vent cap which does not obstruct or reduce the effective cross-sectional area of the flue or vent outlet shall be placed on top of the riser.

Answers to Problems on Page 73 of the July Issue

Problem 1. The four hazards are (1) incomplete combustion, which may produce undesirable amounts of carbon monoxide and/or irritating fumes; (2) inadequate ventilation, which may result in oxygen depletion and carbon dioxide excesses in the room air; (3) fire from overheating combustible substances; (4) leaking fuel.

Problem 2. See Section 23, "Venting of Appliances" (LPGA Pamphlet 1) reproduced in July issue of "Butane-Propane News." We cannot answer regarding your local codes. Please look them up.

Problem 3. The 18 inches clearance is necessary for the servicing of burners and in some cases other units of the heating apparatus. We believe that this should not be limited to "combustible construction," but should be interpreted as applying to anything that might interfere with the clear space required for servicing.

Problem 4. (a) If the heater had previously been used with either natural or manufactured gas, it is almost certain that it will require a change of orifice to give satisfactory operation on L. P. gas. If used with a thermostatic control and not already so equipped, an automatic pilot of the complete shut-off type should be added.

(b) Any appliance, the previous history of which is not known, should be carefully inspected to determine whether or not it is equipped with the proper orifices for L. P. gas. If it is not, the paragraph immediately above would apply.

(c) We could hope that in this case the orifice and adjustments are correct for L. P. gas. Nevertheless, it should be inspected to make sure. It never pays to take a chance. The customer might have changed suppliers because the heater was not operating properly because it had the wrong orifice, but not knowing this, the competitor's gas had been blamed for the deficiency.

Problem 5. The possible hazards are production of carbon monoxide and irritating fumes due to incomplete combustion, and overheating of the appliance and possibility of starting fire in surrounding combustible surfaces and materials due to too high fuel input.

Problem 6. The answer to this question appeared in the previous assignment on range installations. When adjusting the orifice down to the capacity necessary for L. P. gas, there is a possibility that the adjusting needle may be so far off center that mixture of fuel and primary air will not be complete, and unbalanced

(Continued on page 129)

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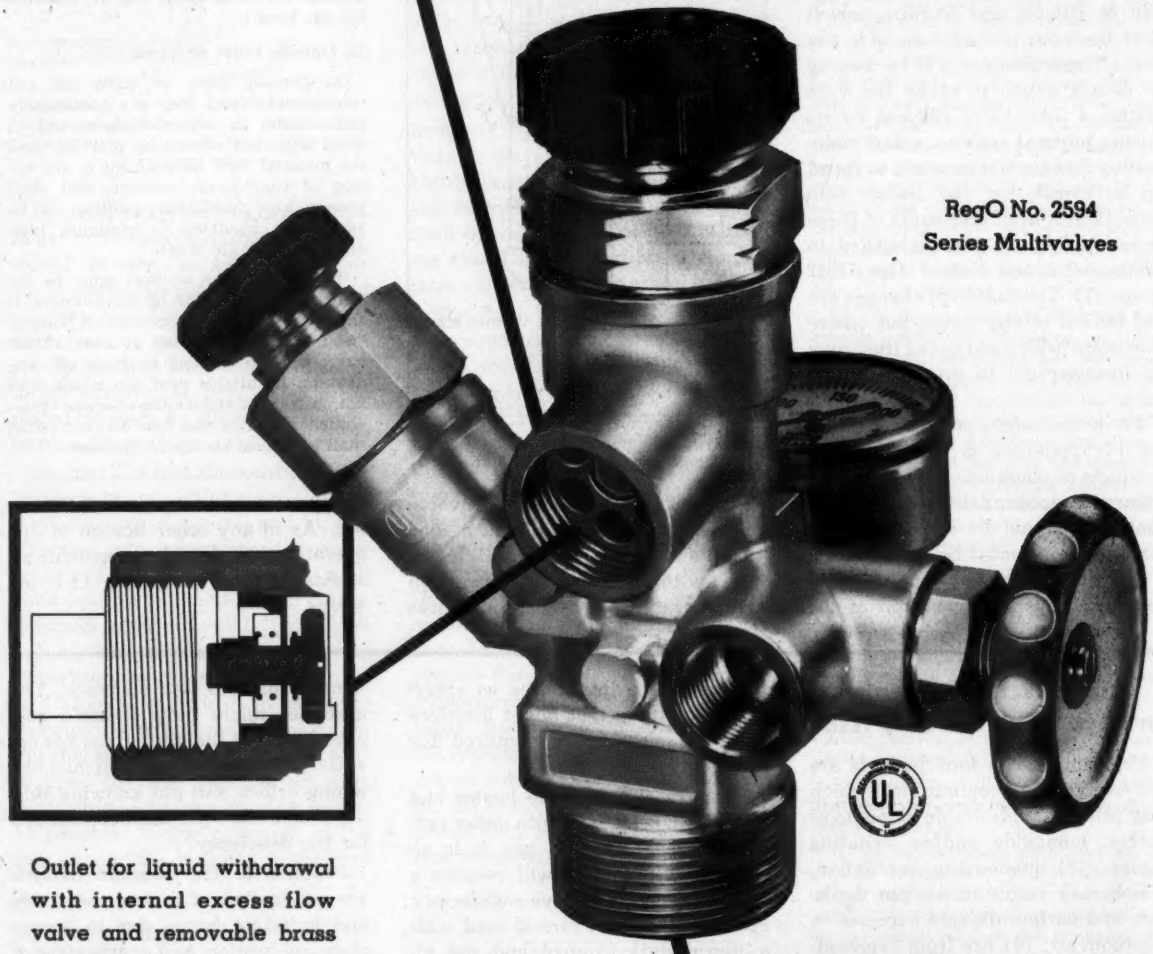

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Problems for Discussion at Eighth Safety Meeting

For this meeting we are continuing the discussion of various phases of installation in which the local and state codes are the governing authority. These can only be mastered properly through the memorizing of considerable detail.

Venting of appliances is generally covered in the building codes, or in a subdivision which becomes a working part of the building code. The provisions are far from uniform in different localities, so it is recommended that this assignment be studied in conjunction with the code applying to your own operation.

We have based our discussion on the recommended practices set forth in LPGA Pamphlet No. 1, which is closest to a standard for the industry that is available. We have used it as a guide in developing the principles involved in venting appliances, and in pointing out reasons for the recommendatons. These same principles apply regardless of who developed the local codes.

The reasons given in the article on venting should be useful in helping the employe to remember the details. Where the details do not coincide with those of the state and local codes, it is in most cases because differences in experience have led to differences in viewpoint, and to the assigning of greater values to certain factors as the result of those differences in viewpoint.

Problems

1. What are the hazards which are avoided by venting appliances?

2. Under your local regulations, what are the classifications, sizes, and uses that determine what appliances must be vented?

3. What appliances need not be vented?

4. What precautions should be taken to keep the air harmless in a room in which an unvented heater is burning?

5. What is the purpose of a draft hood?

6. Why should the draft hood be located as close to the appliance as possible?

7. Why should the draft hood be in the same room as the appliance, and not in the attic or some other room?

8. What are the differences between flues of types A, B and C?

9. Under what conditions is it advisable to use type A flue?

10. What are the advantages and disadvantages of type C flue?

11. What built-in precautions do listed appliances have (except incinerators and conversion burners) which can be considered as a basic safety factor against starting fires in combustible construction or materials near the vent?

12. Why is it impossible to say that the temperature of the flue gas at the vent of an appliance equipped with a conversion burner will not exceed 550° F.?

13. What is a ventilated thimble, and how does it protect walls and partitions against being ignited from the heat of the flue?

14. Why is it wrong to connect a gas appliance to a fireplace chimney without sealing the opening between the gas vent and the fireplace?

15. If you were connecting a warm air furnace to an existing smoke pipe which had formerly vented a coal furnace, and found that the chimney had a damper, what would you do?

16. If you were to secure a new account, and found on inspection that certain appliances were not correctly vented, what would you do?

Retail Credit and Collections

In Five Parts — Part Five

By Sterling S. Speake
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The University of Texas
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Austin, Texas

How To Collect LPG Accounts

COLLECTIONS! COLLECTIONS! COLLECTIONS! Yes, every LPG dealer and every credit person you meet is asking, "How are your collections?", "Do you know any new schemes or tricks?", "How do you collect from a customer of this type . . .?", and so on.

Collection problems are increasing and will probably continue to increase as production of consumer goods increases, with people continuing to shift from one section of the country to another and with a higher percentage of customers buying on a credit basis.

One of the greatest collection problems of many LPG dealers, especially the smaller dealer, is the fact that the customer has been permitted to "run up" a large bill and finally gets so far behind that he quits trading with that dealer and goes elsewhere to buy. An unpaid pyramid account is definitely a collection problem and very likely to be a P & L account later. The collection of an account actually starts at the time the account is opened. It has been said that approximately 90% of all bad accounts were bad when they were placed on the books. So it follows that prevention is the collection cure. Use of the following five procedures should be considered:

1. Are credit applications being used?
2. Are proper investigations being made?
3. Has the proper evaluation of the customer been made?
4. Are statements mailed on time?
5. Is follow-up on accounts done early?

There are three main classes of customers when handling collections. First, those who are good payers because they usually pay promptly.

"Where? Moved to Timbuctu? Well, keep after him!"

Second, are those who are slow, but pay ultimately. This class includes the indifferent type which lets the store wait for its money while they spend their money for pleasure and other pursuits. Also, in this group are good pay customers who are prevented from paying promptly because of misfortune or other causes. In the third class are those who purposely evade payment; and no matter how careful a credit office may be in accepting applicants, a few unreliable ones are granted credit. When collection efforts commence, these persons are discovered.

Steps In Collection Procedure

The following methods of collecting accounts are considered to be effective, but the steps may be changed in accordance with the policy of the individual firm.

1. ITEMIZED STATEMENT—A statement showing what was purchased during the previous month should be the first collection item to go out. This statement should reach the customer by the first of the month unless cycle billing is being used. The modern trend is to mail the customer the signed ticket along with the statement. This saves time, as only the amount of the ticket or ticket number is posted to the statement. The ticket gives the customer a full explanation of the purchase.

2. BALANCE DUE STATEMENT—This is a balance forward statement showing the amount of the previous bill rendered. Some firms prefer to use a rubber stamp indicating that the account is past due. The wording should be clear, firm, and friendly, such as: "Past due—a check will be appreciated."

3. PRINTED REMINDERS—Many firms are now using impersonal reminders to bring the status of the account to the customer's attention. These reminders should be mild and inoffensive, yet should bring home to the customer the fact that he has no doubt overlooked the payment of the account. This collection item should be sent out from 10 to 15 days after the "Balance Due" statement is mailed. Some firms prefer to use two or more such reminders, each printed in a different outstanding color. (See Fig. 1.)

4. COLLECTION LETTERS—Another collection device used by most credit offices is the collection letter series. The first letter should be short, concise and friendly. It should go out from seven to 10 days after the reminder has gone out. Then, if there is no response to the first letter, second and third collection letters may be mailed at intervals of from seven to 10 days, with each letter increasing in force and firmness. Some firms use four or five collection letters in a series; however, this procedure is a matter of store policy.

Considerable thought and planning

should go into writing collection letters and every effort should be made to retain the good-will of the customer. Here are some helpful hints on collection letter writing:

(a) Never make a threat.

(b) Avoid curt statements that will irritate the reader.

(c) Give your letter a human tone. It will make the reader want to cooperate by paying his bill.

(d) Make your letters reasonably brief. No debtor enjoys a collection letter enough to read a long one.

(e) Avoid trite expressions that give your letters a prefunctory "stale" tone. Example: "We note from our records," "if our records are correct," "please attend to same by return mail."

(f) Make it easy for the reader to send a check. Enclosing an addressed envelope helps to minimize his urge to procrastinate.

(g) Avoid negative statements that are uncomplimentary to the reader. Examples: "You have failed to show us even the courtesy of a reply"; "if you continue to ignore this account, we can only assume that you do not wish to do the fair thing."

(h) Be sure to mention the amount of the bill in your letter unless a statement accompanies the message.

(i) Avoid any evidence of exasperation. This only injures the effectiveness of your request for payment.

(j) Make your letters appear to be individually typed. If it is obviously a form letter, the reader is much less inclined to take it seriously.

(k) Put all strong language in the form of a question. Example: "Don't you think you should do something about this account?"

(l) Close your letters with a statement that stimulates action. Leave the reader thinking about the course you want him to take.

5. TELEPHONE CALLS — The telephone has a definite and important place in collections. The telephone is quick, convenient, economical, and it enables the creditor to get in direct contact with the customer for an immediate reply. The proper use of the telephone requires a high degree of ability and unlimited tact, clear voice, good personality, even temper and the ability to think quickly should be some of the requirements of the person making the call. Such calls should be made when it is convenient for the debtor

Don't use "bully" tactics in making collections.

to talk, and should be made to the debtor's home, if possible, and not to his place of employment. Being a good "listener" is important, but the customer should understand that results are expected. After identifying the customer and yourself, a good statement to make to the customer is, "We haven't heard from you lately about your account, Mrs. Doe." This opening calls for a reply from Mrs. Doe and gives her an opportunity to explain one of the reasons that past due debtor's generally give for not having paid the account.

Here are six excuses that are usually given as to why an account remains unpaid:

(a) Illness, sickness or death.

(b) Unemployment.

(c) Overloaded—no money right now.

(d) Domestic troubles—either the wife or the husband didn't know about the account.

(e) Disputed account—error in the bill or the services rendered were not satisfactory.

(f) Neglect—just forgot all about that account, but will be down Saturday.

Listen to these excuses and then try to have an understanding as to when payment might be expected. Agree on the amount and the date of the payment, as it then sets a definite plan to work on towards liquidating the account. "Can you let us have $5.00 on this account out of your next pay check, Mrs. Doe?" is a good question to ask the debtor. It will be very hard for her to say no. Long distance calls have been found to be particularly effective because of the element of surprise.

6. TELEGRAMS — The telegram is being used more frequently by dealers to collect past-due accounts because it conveys the notice of urgency and is therefore effective. A telegram gets the debtor's attention and has proved to be a good means of getting the customer to respond where other efforts have failed. In framing a collection telegram, great care should be taken to see that the wording is not threatening or libelous.

Western Union can furnish samples of suggested telegrams for this purpose, and arrangements may be made with most of their offices for delivery at almost any time of the day or night, thus assuring the arrival of the telegram at the debtor's address when desired. All collection telegrams should be prepaid and never sent *collect*.

7. PERSONAL CALLS—Personal collections by a properly trained collector are very valuable. However, the personal visit as a regular practice is considered too expensive in most instances. If personal calls are used in collecting from difficult past-due account, then the person making the call should be tactful, firm, and friendly. Most customers resent personal collectors and refuse to cooperate with this type of collecting, but this procedure has its place in collection practices, especially when other collection efforts have failed.

8. PRE-COLLECTION SERVICE —This is a service that many credit bureaus render their members. It consists of a series of collection notices or letters written on the stationary of the Credit Bureau. In some cases these letters are sold direct to the merchant and mailed by him, while in other cases, the merchant reports his account to the credit bureau and the bureau mails out the notice.

In either case, the debtor's attention is called to the fact that his account is seriously past due and in order to maintain his credit standing in the community it will be necessary for him to make the proper arrangements for the account.

9. COLLECTION AGENCIES—Many credit managers prefer to utilize the services of collection departments of credit bureaus and other types of responsible collection agencies due to the powerful morale effect on the debtor. The average debtor knows that if he fails to pay an account in the hands of one of these agencies, the entire business community may soon learn of it, and his credit rating will consequently suffer. By constantly following up on the debtor's promises, collection agencies impress upon the debtor the value of maintaining a good credit standing by paying his bills promptly. They are successful in collecting accounts where the creditor has been unable to do so.

Accounts are generally handled by collection agencies on a contingent fee basis ranging from 25 to 50%, depending on the size, age and condition of the account. If there is no collection, there is no charge. Accounts past due six months or more are the type usually placed with these agencies for collection; however, each individual account should be analyzed and handled accordingly. Certainly the creditor should know these facts about a collection agency:

(a) Is it responsible?

(b) Are its charges reasonable?

(c) Is it dignified?

(d) Is it efficient?

10. ATTORNEYS — An account should not be placed with an attorney until all other methods of collection have been exhausted and the creditor is prepared to sever his business relationship with the debtor. At the same time, it is well to remember that the older an account becomes, the more difficult it is to collect. Therefore, when the circumstances warrant the creditor should institute legal proceedings. The account should be at least $50.00 or more in amount to justify suit, at least that is the opinion of most credit men. The filing of a law suit adds considerably to the expense involved so the attorney should be instructed to make every reasonable effort to collect the account before filing the suit.

11. FOLLOW-UP SYSTEM — To facilitate following up in the collection of accounts, various methods are employed. Regardless of the system that is used, it is necessary to keep up-to-date on slow payers and make contact with them on dates that promises or agreements are to be fulfilled.

One of the best methods for following up on accounts is the "dated file" or card system which is commonly known as the "tickler" system. The aim of such a system is to place before the credit man every day all past-due accounts which require attention. The procedure saves time, labor, and gives a complete record of all previous collection efforts. These cards are placed in the "dated file" according to the advanced maturity date, so that the account will appear again at a later date for necessary action in case it has not been paid.

PERHAPS YOU'VE BEEN BUSY-----

"Time flys—
doesn't it?"

. . . . . so busy that you have probably overlooked sending us your remittance covering last month's purchases in the amount of $_____.

. . . . . Our Credit policy provides that payment in full shall be made not later than the tenth day of the month following month of purchase.

. . . . . Your prompt remittance will be greatly appreciated.

BLANK BROS.
Credit Department

Fig. 1. Sample of "reminder" type collection form.

Ten Rules For Collecting

There are many different ideas about the procedure for collecting accounts. Some credit people feel that one device is better than another, or that certain methods will work in one case and not in the next.

1. START EARLY. Don't allow the account to become too far past due before efforts are started to collect. The longer the account is allowed to "ride," the harder it will be to collect.

2. STRIKE LIGHTLY. Build up the collection efforts. Start off with mild attempts and increase each step in forcefulness.

3. VARY COLLECTION DEVICES. In order to be effective in collection procedure, each step should be different. If a reminder is sent one time, then something else, such as a collection letter should be sent the next time, then a telephone call and so on. Vary each device for satisfactory results.

4. BE PERSISTENT. Don't give up too easily. Almost any account can be collected if persistence prevails. The debtor is likely to pay the account upon the very next contact. Stay with him!

5. ASK FOR THE MONEY. Some creditors are afraid to ask the debtor for the money. Certainly, collection of the account may not ever be made unless he is asked for the money.

6. BE FIRM, BUT FAIR. Let the customer know that you expect payment of the account, but be fair. If he has had sickness or trouble, work out a fair plan.

7. DON'T MAKE ANY FALSE THREATS. Never tell the customer that a certain thing is going to happen if he doesn't pay, when that thing is a threat and will never happen.

8. COOPERATE, BUT DON'T IRRITATE. Little is gained by harassing the debtor. Work out a satisfactory plan wherein there is cooperation on both sides. If necessary the creditor should go more than half way with the debtor in working out a plan for payment.

9. HAVE A CLOSE FOLLOW-UP. Keeping a close watch on slow payers is absolutely essential to provide a good collection percentage record.

10. CONSIDER OUTSIDE AIDS. When all efforts of the creditor have failed, then consideration should be given to the use of outside aids.

Appliance Sales Doubled By Downtown Location

By Ernest W. Fair

Field Editor
Butane-Propane News

LPG tank unit is used to attract attention of heavy traffic passing this store. Unit also served as valuable demonstration aid for salesmen.

"THE closer you can get to the downtown district of your city the better. Appliance sales are double what they would be otherwise and you'll sell many a system installation some competitor would have secured if you weren't in that choice spot."

Sam Barnett, manager of the Pine Bluff Butane Gas Co., Pine Bluff, Ark., makes this statement and then adds that the location has taught him he could do even better if he were in the very heart of the business district. The store is just outside the main business area in Pine Bluff's busiest street.

Dealers who feel higher rent of such locations will offset any gains from additional sales should talk to Mr. Barnett. The increase in additional sales from walk-in's is so great, he points out, that added rental costs become no factor whatever.

"During the fall and winter season we will average three appliance sales a day," he will explain, "while during the summer off-season we've averaged one a day for the past two years. Being in this location we get a lot of sales that otherwise would have gone to furniture stores and appliance dealers in the downtown area.

"If you're located on the edge of your city or at your bulk plant 99% of your sales are going to have to be those you go out and solicit from your regular customers. In a location such as this you have a chance at every person who goes by on foot or in a car, and you'll find rural folks coming to town a lot oftener today than they used to in the past."

The location sells installations, too, particularly since a complete tank unit set-up, covered with advertising, was installed at the front of the store.

"That really sells systems for us," Mr. Barnett explains, "because anyone with but the slightest interest in a system can't help but have his curiosity aroused by the unit as you see it there. Time after time we've had people come in and ask us about it and tell us when they bought that seeing the unit there got them to thinking about it.

"Of course, it has another big advantage to us in that it gives us an actual unit right at the salesroom to sell with rather than have to work from pictures or take a prospect out to an installation. Fortunately, the building is so constructed we can do this since there's a set-back from the sidewalk, but this has proven so

Roomy display space is feature of appliance department.

valuable to us I would recommend a dealer's front be altered to do this, or at least setting one up in the front window. Month after month this gives us opportunities to sell installations we would never have known about otherwise."

The firm purchased the P. A. Smith Co. two years ago and now has eight employes with three trucks and two full-time service and installation men.

"Don't ever underestimate service," Mr. Barnett advises. "It's the biggest single factor in your ability to get new customers and to hold the old ones. When a customer has a breakdown he wants service on his equipment right now and not tomorrow."

Repair Kits on Trucks

Many service calls can be eliminated by giving truck drivers some basic education in handling small problems, he believes, and providing them with repair kits on their trucks. On every stop drivers ask if any adjustments are needed and make a close visual check of the entire installation.

"That one little thing has enabled us to have our service men available to handle real emergency calls speedily," Mr. Barnett explains, "and has eliminated more than half of the service calls we used to get. I guess we're like others since we make no effort to profit out of service calls—we charge only for parts and at a $1.50 an hour rate for the mechanic."

$150 Telephone Saving

Sam Barnett believes that one of the best ways for any dealer to find extra profits is to keep a constant eye on overhead costs. Monthly telephone toll charges were reduced from $200 to less than $50 by instructions to drivers to always use person-to-person calls. If there are no orders for gas for a particular driver when he calls in, Mr. Barnett declines the call and saves the toil.

When he took over the business, three service trucks were operating on gasoline instead of butane. He converted them and cut the firm's monthly gas bill from $250 to $30, which covers his own personal car use in business. The provision of repair kits on tank trucks eliminated the need for one full-time service man at a $250 a month saving.

"There's no excuse for any business to be in existence if it can't be operated profitably," he believes, "and that's the best and surest way to build a gas business anywhere. No matter what your volume, you can make a profit if you'll just keep an eye always on that overhead and find ways and means to keep it in line with the business all of the time."

He also believes no dealer should lose sight of the profits in the bottled gas business and the many new sales that can be made with it. The temptation to concentrate entirely on big tanks loses many sales when the new customer cannot afford that much of an initial outlay.

"It sells us a lot of installations which develop into sizable tank deals I'm sure would never have been made otherwise," he points out, "and besides, the 20 cents a gallon you can get in bottles is very profitable merchandising.

"We sell many an installation with our plan of a $44 lease fee on two bottles, with this covering the entire period of use, by allowing our customer a credit of this entire amount when he does buy a tank installation."

All of these are good business methods keeping the Pine Bluff Butane Gas Co. on a profitable operation basis, but the one to which Sam Barnett points as being of most importance is the firm's downtown location and the display of the complete tank set-up right out front where everyone can see it.

Adams Rejoins Caldwell

Robert L. Adams

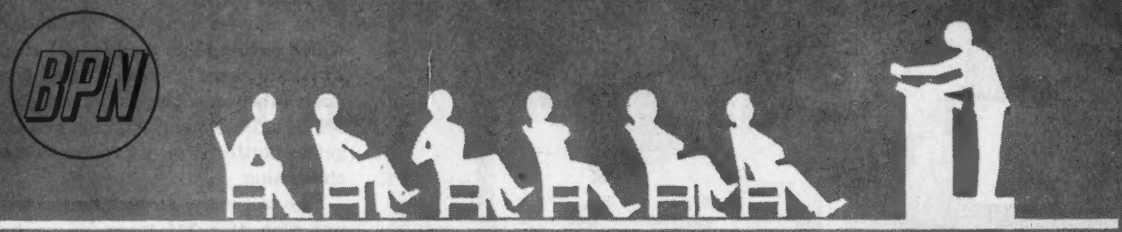
Robert L. Adams, just returned from active duty in Korea, has rejoined the sales organization of Zerah T. Caldwell, Malvern, Ark. Mr. Adams has been appointed to the Central Texas area representing Adams Bros. Mfg. Co., Inc., Crown Stove Works, and United States Stove Co.

Tanner Leaves LPGA Post

Robert C. Tanner, who has been district secretary of the Liquefied Petroleum Gas Association at Wichita, Kan., since April, 1950, resigned effective July 1 to accept a position with O. A. Sutton Corp. of the same city. He will be engaged in advertising, publicity and sales promotion work.

O. A. Sutton Corp. manufactures air circulators and room air conditioners.

Mr. Tanner's successor as secretary of LPGA's Central States District has not been named, according to Howard D. White, executive vice president of the trade association.



ASSOCIATION NEWS

Texas Butane Dealers Convention Draws Record Crowd

By Craig Espy

THE eighth annual convention of Texas Butane Dealers Association, held in Dallas, June 24-26, not only set a record for attendance but also attracted more exhibitors to its Southwestern Trade Show than ever before. Six hundred and thirty-five registered at the conference. Forty-six exhibitors displayed products in a total of 62 booths.

President J. H. Winton summed up the advantages of belonging to the association when he said, "Membership doesn't cost but it pays," and told what had been done in the past year to sponsor worthwhile legislation and to protest against discriminatory legislation.

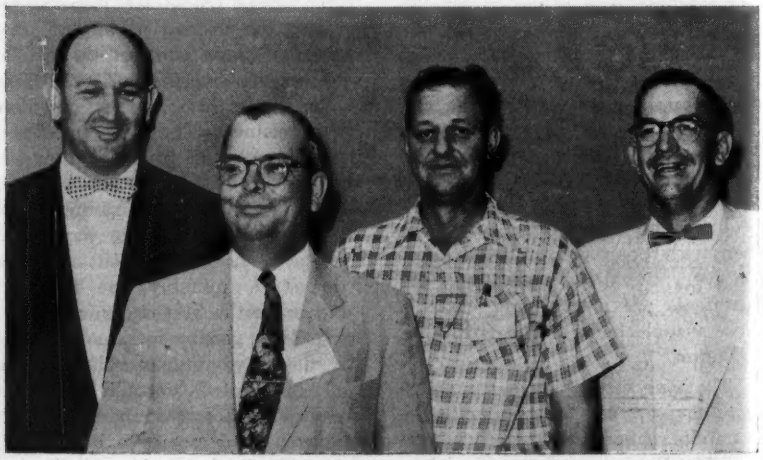
He also reviewed the association's work in support of the adequate storage program; to provide better insurance coverage, and to better train members at management and employe levels in the proper conduct of their businesses. He said the accident prevention program, fostered by the association, is developing into one of the most important projects of the organization.

In a talk on "Steel Storage—Can It Be Financed?" William H. Brooks, executive director, LPG Tank Fabricators Association, Inc., Washington, D. C., discussed the present steel tank storage program and told of possible sources of funds to finance the purchase of tanks: RFC or other government agencies; local banks; nearby large city banks; private capital; finance companies.

John H. Homsy, engineer, Federal Communications Commission, Dallas, talking on "Calling All Dealers," pointed out the advantages of two-way radio communication and outlined how to apply to FCC for a permit to operate a system of this type.

Speaking on "Do You Feel a Shock in Your Pocketbook?" S. M. Apperson, sales manager, Southern Union Gas Co., Austin, described some of the propaganda being put out on cooking with electricity by General Electrovich, Hot Pointovich, Frigid Daireski, Westing Housen, Kelvin Natorski and others. He told the dealers what his company is doing to offset sales of electric ranges, and reported that 29 dealers in Austin had sold 500 electric ranges in 1950-51-52 as compared with 9,470 gas ranges. "Dealers trying to handle both electric and gas appliances are not making money on electric appliances," he said, "for your maximum discount is 30% and it costs you 30% to open your doors." He also called upon the L. P. gas dealers to join hands with the gas utility industry to fight electric competition.

S. H. Womack, retail training specialist, University of Texas, Extension Division, Austin, in an address entitled "Is a Route Driver Supposed to Sell?" called upon dealers to maintain close check on route drivers to



New officers of Texas Butane Dealers Association, left to right: Jack Anderson, vice president 'Yurown Gas Co., McKinney; J. A. Farrar, president, Bell Mead Butane Gas and Appliance Co., Waco; J. B. Mumme, vice president, J. B. Mumme Sales Co., Alice; and Glen Cope, Cope Butane Co., Lamesa. Other officers not shown in picture: W. C. Warren, vice president, Plains Gas, Inc., Lubbock; and J. Moos, secretary-treasurer, Austin Hydro-Gas Co., Austin.

determine whether their sales influence is good or bad. "Ninety percent of the drivers are not doing a good selling job," he said, as revealed by a survey he conducted over the last three months. "The route driver is your company to the customers, and what they think of him is what they think of your company."

Speaking on the subject "Better Competitor Relations Can Mean Better Customer Service," Fred Rives, vice president, Consolidated Gas Co., Atlanta, Ga., discussed dealer financing, profits, the personal responsibility of management, and the market value of a business. Various solutions to the problems of financing a business were presented.

Speaking on the subject "Do You Want to Save Some Real Money?" J. D. Wheeler, director, Compensation Division, Texas Insurance Department, Austin, told how unnecessary and uncalled for accidents are increasing insurance premiums to the point that insurance cost is reportedly the third largest item of expense in operating a business. Stressing the fact that "Losses Make the Rate," he called upon the dealers to do a better job of stopping accidents to reduce rates.

Mr. Wheeler said that a successful accident prevention program calls for enforcement by top management of a safety program, and cooperation by employes in working safely. He stated that he knew of no industry in Texas making the honest effort to eliminate accidents that the LPG industry is making.

Executive Secretary William J. Lawson and outgoing president, J. H. Winton, and all committeemen were praised for the highly successful program, the unusual entertainment features, and the splendid trade show.

Unusual honor was paid the exhibitors at one of the luncheons. Representatives of each firm exhibiting were placed in seats of honor and were later introduced by Fred Hutson, chairman of the convention committee, who presided. The Honorable Jeff Williams, of Chickasha, Okla., was luncheon speaker.

Attendance on the part of wives has been encouraged in recent years. Several special functions were provided this year for their entertainment, including a two-hour White Rock Lake cruise on the old Bonnie Barge river boat, skippered by John Williams. This entertainment was provided by Squibb-Taylor, Inc. Mrs. Cecil Squibb, Mrs. Cliff Squibb, Mrs. Bob Allen, Mrs. Lester Ivy and Mrs. H. O. Short were hostesses.

Also, for the comfort and entertainment of the ladies, Gas Equipment Co. provided the "Tally Ho" room on the mezzanine floor of the Baker Hotel as a gathering place and as a place to meet, rest, freshen up, use the telephones, play cards or games, and generally relax. A hostess and maid were in attendance and special favors were presented to each lady.

The association was host to an 8 a.m. breakfast each morning. Movies were provided for the interim period between breakfast and opening sessions of the convention. Hal Halloran presented a sales training film at one of these breakfasts, sponsored by the Promotion Committee of LPGA.

The annual banquet and fun night featured entertainment by Herman Waldman's band and floor show and an ice review by Dot Franey.

The following were named as directors for a two-year period: Dan Hutchinson, DeKalb; T. Gubert, Alvin; L. Lehmberg, Poteet; L. W. Gardner, Jr., Hamilton; Harold Cunningham, Bowie; Paul Keaton, Snyder; Charles McLure, Van Horn, and Van E. Barbour, Tulia.

Members elected at large are: J. A. Farrar, Waco; Glen Cope, Lamesa; C. A. Wood, Linden, and J. B. Burns, Liberty.

Through its new president, the incoming administration has already announced that the accident prevention program now in progress will continue to be the number one project of the association.

Arkansas

The fourteenth annual meeting of the Arkansas Butane Dealers Association, held in Little Rock, June 7-9, was the largest and best attended in the history of the association, with dealers, employes and wives registered. The program was devoted principally to phases of selling. K. R. D. Wolfe, vice president of the Fisher Governor Co., spoke on "Keeping a Sale Sold Through Service." Roy Horsman, Little Rock, spoke on "The Need for Old Fashioned Aggressive Selling." The title of the talk given by M. L. Trotter, president LPGA, was "You Can't Make a Profit Without a Sale." Henry Wieckman, Kansas City regional manager, Skelgas sas City regional manager Skelgas division of Skelly Oil Co., analyzed the delivery factors of L. P. gas and emphasized the necessity for obtaining an adequate margin to cover operating costs and profits. Carl Abell, editor Butane-Propane News, outlined the causes of adverse publicity which handicap the industry, and recommended methods for overcoming this sales resistance. Howard D. White, executive vice president of the LPGA, speaking on the subject, "The National L. P. Gas Picture Today," pointed out how the problems and activities of the Arkansas association and the National LPGA are all a part of the same common problems of dealers, suppliers and related industries.

"Passing the buck" at the Arkansas state convention. Retiring president Bob Remy hands a silver dollar to incoming president Ottis Cash, who has never before seen that large a piece of hard cash!

Social highlights of the convention were the president's reception, the style and hair dressing show for the ladies, the county fair held Monday night which was attended by 412 people, and the closing dinner dance Tuesday night.

Ohio

Forrest Fram

The Breakers Hotel, Cedar Point, was the scene of the annual convention of the Ohio LPGA held June 15-16.

The first day's activities opened in the morning with registration, followed by luncheon and talks by Paul Tucker, Phillips Petroleum Co., and G. L. Brennan, Warren Petroleum Co.

Afternoon events included a business meeting and election of officers, at which Forrest Fram, Fram Heating

Co., Chagrin Falls, was named president for the coming year. William Everett, Ever Gas, Belaire, was elected vice president, and F. J. Rupert, Ohio Gas and Appliance, Columbus, secretary-treasurer.

Social features of the convention included a banquet and floor show the first evening and a boat trip with luncheon on Lake Erie which brought the convention to a close on the second day.

S. S. Margulies receives plaque from E. G. Riley, president of South Dakota LPGA, during recent annual meeting held at Rapid City.

South Dakota

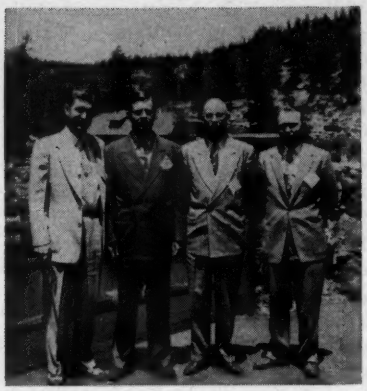
Highlight of the recent annual meeting of the South Dakota LPGA was the awarding of a plaque to S. S. Margulies, founder and first chairman of the South Dakota Association, in honor of his pioneer work in the LPG history. Mr. Margulies was the first L. P. gas dealer in the state and first president of the Western Gas & Appliance Co., Inc., Rapid City.

Mountain States LPGA Meets In Colorado

Colorado ranks fourth among the forty-eight states in number of members of the Liquefied Petroleum Gas Association, Inc. This fact was brought out at the Mountain States District LPGA meeting held at Troutdale-in-the-Pines, Evergreen, Colo., June 14-16.

The meeting was sponsored jointly by the LPGA and the Colorado L. P. Gas Association, under the guidance of District Secretary J. C. Crawford and President J. L. Thompson. The registration of nearly 300 included guests from Nebraska, Kansas, Oklahoma, Texas, and a few from even farther away.

The oustanding event of the program was a dramatic demonstration of the advantages of gas over elec-



New officers of Colorado L. P. Gas Association. L. to R., Bob Strawn, director, La Junta; L. C. Caughran, president, Dove Creek; A. B. Morrow, vice president, Burlington; E. M. Samuelson, director, Pueblo. Pictures courtesy Eaton Metal Products Co., Denver.

tricity for cooking, staged by Frank Henke and Bill Johnson, of Harper-Wyman Co., which occupied the Monday morning session.

Other demonstrations and talks included "The Magic of Fire", by Ed Podgorski, U. S. Bureau of Mines, Denver; "A Banker's Views on Credit and Dealer Financing", by Hal E. Roof, Central Bank & Trust Co., Denver; "Who Is Responsible for Safety?" by Carl Abell, Butane-Propane News; "Why Don't They Tell Me These Things?" by Charles Corken, Corken's, Inc.; "Only the Strong Can Be Free", by Rudy Mahnke, LPGA; "It's Time For a Change", by Mel (Skinny) Ennis, LPGA. E. S. Kleinman, Dearborn Stove Co., pulled a very effective switch in his talk, "Your First Customer", by showing that the first person that the dealer must sell are his employes.

Holding the meeting at a famous resort just prior to its opening for the summer tourist season held many

The Mountain States District LPGA meeting watched dramatic demonstration of the superiority of L. P. gas cooking over electricity, by Frank Henke and Bill Johnson, of Harper-Wyman Co.

advantages. With the reasonable preseason rates, many of those attending brought their families, and special events for the ladies heightened the interest from the social standpoint. With the entire convention housed in the one resort, with no competitive attractions for diversion, the group stuck to business during the business sessions, with an exceptionally high attendance at all meetings. Regular attendance was further stimulated by raffling numerous attendance prizes at unexpected times during the program, with the requirement that the holder of the winning ticket had to be present, otherwise another name would be drawn until an on-the-spot winner had been found. In awarding the final attendance prize, a top-grain leather two-suiter bag, eligibility for the prize was limited to those who held "booth attendance cards" validated by every one of the exhibitors in the trade show, which occupied most of the hotel lobby and part of the driveway.

Monday evening was devoted to fun, including a buffet dinner, entertainment, and dancing.

Michigan

Houghton Lake was the scene of the annual summer meeting of the Michigan LPGA held on June 25-27.

A directors' meeting of all officers and directors of the association, past and present, got the convention under way. Among speakers on the program were Harold Rust, Handley-Brown Co., "Chuck" Whoope, Ansul Chemical Co., and Miss Grace Lattimore, C. O. Jones Insurance Co.

Social and recreational activities of the convention included a buffet supper, a banquet with music and dancing, and a day of sports, including a golf tournament and fishing.

Minnesota

A 25% increase in attendance was reported at the second annual summer meeting of the Minnesota LPGA at Detroit Lakes June 26-27.

Registration opened the meeting, followed by a board of directors meeting and a general business meeting at which President Steve Fligelman presided. Guest speaker was Charles Bubar, Northwest Hydrogas Co.

The afternoon program, with the theme of "Service and Safety", included talks by Howard White, executive vice president, LPGA; George Webster, Pyrofax Gas Co., and Leonard Lund, Minnesota state fire marshal. A fish fry and band entertain-

ment rounded out the day's activities.

Second day events of the convention included a "training for selling" talk by M. A. Ennis, LP-Gas Promotion committee, an industry panel discussion on "service tricks of the trade" and a concluding "just for fun" program consisting of golf, boat cruises, fishing and bathing.

400 Attend Missouri LPGA Meet

By Craig Espy

SPEAKING on "Financing an L. P. Gas Business," before the 1953 Annual Convention & Trade Exhibit of the Missouri L. P. Gas Association, held in St. Louis, June 16-18, Cyril J. Jedlicka, vice president, City National Bank, Kansas City, urged LPG dealers to get better acquainted with their bankers in order to secure financing for business expansion. "Visit with your banker," he said. "Acquaint him with your industry. Sell him on your business. Show him you are making money. Point out that you are an integral part of your community and worthy of securing loans from the community bank. Also, show him he can earn good interest on his investment." He also recommended that dealers prepare a monthly operating statement.

A previous speaker, Mel Trotter, president of LPGA, presented in his talk, entitled "Looking for Leaks," a typical operating statement covering sales, cost of sales, gross profit and percentage of gross profit to sales. Mr. Trotter recommended the regular issuance of an operating statement as the best way to stop leaks developing in any business. "More leaks develop in the distribution end of the business," he said, "in moving L. P. products to the customers." He also called upon the dealers to do a better job of selling to gain and hold customers and of servicing to stop leaks.

Attending Minnesota Petroleum Gas Association summer meeting (left to right): Robert Zupke, Natrogas Co.; Art Peterson, Utility Gas Co.; H. E. Hansen, general convention chairman; Charles Tenney, Willmar Gas Co.; John E. Kelderhouse, district secretary, LPGA; Howard White, executive vice president, LPGA; Steve Fligelman, president, Minnesota Petroleum Gas Association; Gil Bursinger, secretary-treasurer; J. Anderson, Allied Gas Co.; Larry Dow, Dupane Gas Co.; R. Sheurman, Skelgas Co.

Talking on Atomic Energy, Orville Roberts, Sinclair Pipeline Co., Independence Kan., described the powerful effect of atomic weapons and at the same time revealed peacetime uses of the product. In introducing this speaker, John Storm of Sinclair Oil & Gas Co., pointed out that Mr. Roberts had delivered over 1000 speeches in the past 10 years on the subject of "Atomic Energy in Your Future."

Speaking on "Gas Dryer Sales Potential," Don Davidson, sales promotion manager of Whirlpool Corp., St. Joseph, Mich., stated that clothes dryers are becoming increasingly popular with women. He called on dealers to get on board the clothes-dryer sales bandwagon. "The sale of gas dryers is 14.4% ahead of last year," he stated, "while electric dryers are 40% ahead of last year." He called attention to the fact that the laundry type of equipment is "going upstairs" and stated that 52% of the women are interested in matching washers and dryers. He also pointed out that more than 45% of the sales of laundry dryers is to homes valued under $10,000.

As a means of promoting sales of dryers he suggested that dealers provide a "floater dryer"—one than can be loaned out to prospects. He also suggested that dryers be put up by dealers as door prizes at church, school and PTA functions.

I. W. (Pat) Patterson, vice president and sales manager of General Gas Corp., pointed out in a talk on "What Is Your Sales Outlook?" that we are now selling in a period when salesmen must be able to overcome sales objections. "This requires sales training," he said as he urged dealers to start sales training schools now.

In showing the dealers what happens when the sales price of an item is cut, Mr. Patterson discussed the following hypothetical case: The sale

New officers of the Missouri LPGA, left to right: J. C. Edmonston, vice president, Edmonston Gas Appliance Co., Hornersville, Mo.; L. B. Beckett, treasurer, Hetro Gas Co., Cameron; L. C. Fritts, president, Tri-Gas Co., Springfield; Melvin Hall, outgoing president, Tri-State Gas Co., Noel; and D. M. Orcutt, secretary, Missouri LPGA.

price on an item is $100—cost is $75—gross profit $25. Figuring that he can force demand by cutting his price 5%, the dealer yields to the temptation. We now have a selling price of $95—cost $75—gross profit $20. To regain the $5 gross profit lost by price cutting, 25% additional business must be obtained. The dealer must jump his sales from $100 to $125 to expect to hold a gross profit with a 5% price cut.

Melvin Hall, president of the association, presided over all meetings. His annual report dealt mainly with the progress of the association during the past year.

Crump Taylor, membership chairman, reported that there had been a 38% gain in membership. L. C. Fritts brought the treasurer's report and W. H. Schuette, the report of the educational and development committee.

In the insurance committee report of A. W. Scofield, H. L. Peck of C. O. Jones & Sons Insurance Agency, was called upon to introduce Don Elliott, manager of group insurance of Prudential Insurance Co., who discussed the group insurance plan now being made available to members of the Missouri Association.

O. E. Mueller, chairman of the Convention & Trade Show Committee, reported that 31 exhibitors had taken space in the show.

New officers elected to head the work of the association during the coming year are as follows: L. C. Fritts, president; J. C. Edmonston, vice president; L. D. Beckett, treasurer, and D. M. Orcutt, secretary.

During the year the association voted to change the number of districts within the state from four to nine. Under this plan, 18 directors, or two from each district, will be elected.

Total registration at the convention was announced as 400, which represents a substantial gain over the registration of the previous year.

According to Secretary Orcutt, a considerably larger group of ladies attended this year's meeting. The ladies were given a brunch and were taken on a shopping tour. A bingo party was also held, at which valuable prizes were given out. This was presided over by Max Fetty, Delta Tank Manufacturing Co.

Duke Sweeny, of Delta Tank Manufacturing Co., presided as master of ceremonies at the annual banquet.

Wyoming

Seventy-five were registered at the annual meeting of the Wyoming LPGA June 23-24 at Casper.

In attendance at the convention was Mel Trotter, president of LPGA, who delivered an address on teamwork in the industry. Other speakers included W. N. McMillen, Gas Equipment Co., Denver; Bert Sheldon, Ranchers' Gas and Supply Co., Cheyenne; E. V. Reichstetter, Denver, and Bob Bates, Dearborn Stove Co., Kansas City.

C. A. Brown, Pure Gas Service, Riverton, was elected new president of the association. Vice presidents are T. C. Wassenberg, Wassenberg Gas and Appliance, Gillette, and William Denney, Wyoming Gas Service, Newcastle, with Vernon Moncure, Pure Gas Service, Powell, named as treasurer.

Eastern Service School

Installation, operation and maintenance of L. P. gas equipment, regulators, controls and appliances will be featured at the Fifth Eastern LPG Service School to be held at the University of Bridgeport, Bridgeport, Conn., September 9-12, sponsored by the LPGA.

The courses will feature talks and demonstrations arranged to give common sense answers to day-to-day service and maintenance problems, and are designed for inexperienced as well as experienced men.

Further information may be secured from the LP-Gas Association's district offices located at 419 Boylston Street, Boston, Mass., or 2501 North Front Street, Harrisburg, Penna., or from the Division of Industrial Services, University of Bridgeport, 285 Park Avenue, Bridgeport, Conn.

LPGA Committee Heads Named For 1953-54

Eleven committee chairmen for 1953-54 have been named by LPGA President Mel Trotter. Four of the appointees were 1952-53 chairmen who have been renamed to their posts for the coming year.

Reappointed are: Roy R. Johnson, Fuelane Corp., Liberty, N. Y., Appliance Specification Committee; Geo. R. Benz, Phillips Petroleum Co., Bartlesville, Okla., Transportation Committee; A. F. Smith, A. O. Smith Corp., Milwaukee, Market Research Committee, and A. H. Menuet, Skelly Oil Co., Kansas City, Mo., Technical and Standards Committee.

The following chairmen are new appointees: C. J. McAllister, The Parlett Gas Co., Waldorf, Md., Organization Committee; Charles O. Russell, Rapid-Thermogas Co., Des Moines, Finance Committee; R. H. Wherry, Gas Equipment Supply Co., Atlanta, Safety Committee; T. V. Scott, The Weatherhead Co., Cleveland, Publicity and Advertising Committee; K. R. D. Wolfe, Fisher Governor Co., Marshalltown, Iowa, Constitution and By-Laws Committee;

In attendance at the Wyoming LPGA convention, Casper (standing, left to right): Jim Crawford, district secretary, LPGA; Barney Decora, director and retiring president, Sweetwater Gas Co., Rock Springs; Vernon Moncure, treasurer, Pure Gas Service, Powell; William Denney, 2nd vice president, Wyoming Gas Service, Newcastle; T. C. Wassenberg, 1st vice president, Wassenberg Gas and Appliance, Gillette; (seated) C. A. Brown, new president, Pure Gas Service, Riverton; M. L. Trotter, president LPGA, Columbia, S. C.

A. E. Bone, Eastern Propane Co., Malvern, Pa., Membership Committee, and J. R. Herrin, Coastal Butane Gas Corp., Summerville, S. C., Convention Committee.

State Legislation

Recent legislation affecting the LPG industry is listed below according to states, as reported in the LPGA Bulletin:

CALIFORNIA:

1. Senate Bill No. 1702, relating to gas appliance vents, has now been passed in both houses.

State Motor Fuel Tax law amended to provide increase of 1½ cents per gallon became effective July 1.

COLORADO:

1. House Bill No. 467, changing the weights and measures became a law July 1. It is to be noted that under the law all scales used for business purposes must be licensed by the State Department of Agriculture.

CONNECTICUT:

1. House Bill No. 1529 increasing sales and use taxes from 2% to 3% for a two-year period, beginning July 1, 1953. This bill is awaiting approval by the governor.

2. Public Act No. 217, effective Oct. 1, extending from the 15th day of each month to the 20th day the time for filing returns and paying special fuel use taxes.

ILLINOIS:

1. House Bill No. 443, the LPGA Model Container Law, has passed the House.

2. House Bill No. 620, amending the motor fuel tax law to include a provision that would subject to the motor fuel tax all LPG delivered into a storage tank located at a retail motor vehicle service station, has now been passed in both the House and Senate.

MICHIGAN:

1. House Bill No. 467, changing the present method of handling motor fuel use taxation of liquefied petroleum gas, was enacted into law effective June 1. This bill was similar to the North American Gasoline Tax Conference model law. The tax is imposed when LPG is delivered into the fuel supply tank of a motor vehicle or when delivered into storage used exclusively for delivery to motor vehicles. Dealers are required to have licenses and file customary bonds and reports. The tax rate is fixed at 4½ cents per gallon, 1 cent less than the existing gasoline tax rate.

NEBRASKA:

1. Legislative Bill No. 107, relative to motor fuel use taxation of LPG, has been passed and approved by the governor. It is substantially the same as the North American Gasoline Tax Conference model law and imposes the tax when LPG is delivered into the fuel supply tank of a motor vehicle. Dealers are required to have licenses and file customary bonds and reports.

OKLAHOMA:

1. House Bill No. 729, the revision of the LPG safety regulatory law, became effective June 30.

2. House Bill No. 741, relative to the motor fuel use taxation of LPG. It is similar to the North American Gasoline Tax Conference model law, and imposes the motor fuel use tax when LPG is delivered into the fuel supply tank of a motor vehicle. Dealers are required to have licenses and file customary bonds and reports.

New Regulations

New regulations covering LPG has been published by the Louisiana LPG commission, whose 1952 edition of its L. P. Gas Rules and Regulations is available from the commission at Baton Rouge at $1 per copy. The regulations in general conform to NFPA Pamphlet No. 58, but sufficient variances and additional material require detailed reading of the regulations.

All associations are invited to send in dates of their forthcoming meetings for this calendar.

AUGUST

Aug. 2—L. P. Gas Management Short Course. Georgia Institute of Technology, Atlanta.

Aug. 5—New York State L. P. Gas Association. Summer Meeting, Syracuse Yacht Club, Syracuse.

Aug. 30-Sept. 1—Alabama L. P. Gas Dealers Association. Montgomery.

SEPTEMBER

Sept. 9-12—5th Eastern LPG Service School. University of Bridgeport, Bridgeport, Conn.

Sept. 13-15—New Mexico L. P. Gas Association. State meeting. Hilton Hotel, Albuquerque.

Sept. 14-15—Virginia L. P. Gas Association. Annual Convention. Hotel Chamberlain, Old Point Comfort.

Sept. 14-17—Texas Butane Dealers Association Management Institute Training Program. Lubbock.

Sept. 21-22—Iowa L. P. Gas Association. Fall Meeting, Savery Hotel, Des Moines.

Sept. 22—Pennsylvania L. P. Gas Association. Annual meeting. Penn Harris Hotel, Harrisburg.

Sept. 26-27—Wisconsin LPGA. Fall meeting. Northernaire Hotel & Spa, Three Lakes.

OCTOBER

Oct. 11-17—Oil Progress Week.

Oct. 19-23—41st National Safety Congress and Exposition, Conrad Hilton, Congress, Morrison and Hamilton Hotels, Chicago.

Oct. 23—NGAA Southern Regional Meeting, Blackstone Hotel, Tyler, Tex.

NOVEMBER

Nov. 20—NGAA Panhandle - Plains Regional Meeting, Herring Hotel, Amarillo, Tex.

1954

JANUARY

Jan. 5-26—Michigan LPGA winter meeting, Pantlind Hotel, Grand Rapids.

FEBRUARY

Feb. 26—NGAA Permian Basin Regional Meeting, Lincoln Hotel, Odessa, Tex.

APRIL

April 5-7—Nebraska Liquefied Petroleum Gas Dealers Association. Annual convention and trade show. Fontenelle Hotel, Omaha.

April 21-23—NGAA 33rd Annual Convention, Baker Hotel, Dallas, Tex.

April 24—Liquid Gas Dealers Association of California. Annual Meeting, Palace Hotel, San Francisco.

MAY

May 9-12—LPGA annual convention and trade show. Conrad Hilton hotel, Chicago.

Products and Trade Publications

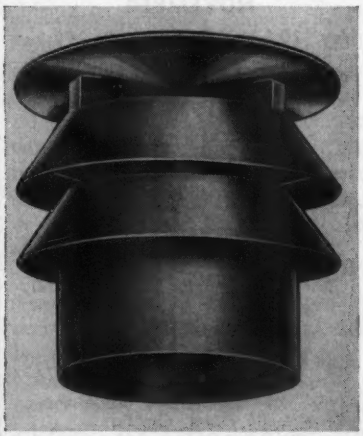
To secure further information on products or new publications, fill out the coupon and mail, indicating by number the items desired.

1. Draft Cap

The "Draft King," a cap for chimneys, flues and ventilators, is a new product of the A. R. Wood Manufacturing Co., designed to solve draft problems.

The cap, which has no moving parts and is constructed of galvanized steel or aluminum, has been field tested in mountains and plains for over three years. Due to its special patented design, the upper and lower draft rings are kept warm by flue gases; cap does not freeze shut with ice and snow, and pilot blowouts and low and high fire fluctuations are eliminated. The cap will not soot shut, thus helping to prevent costly chimney fires.

The "Draft King" also acts as a spark arrester. A vacuum is created by prevailing winds from any and all



directions. Condensation is eliminated in flues and units, thereby cutting down fuel costs.

"Draft King" can be used on furnaces, space heaters, hot water heaters, stock tank heaters, trailer houses, fish houses, cottages and for ventilating systems.

A. R. Wood Manufacturing Co.

2. Wheel Pipe Cutter

A newly engineered, redesigned line of wheel pipe cutters is now being manufactured by Beaver Pipe Tools, Inc.

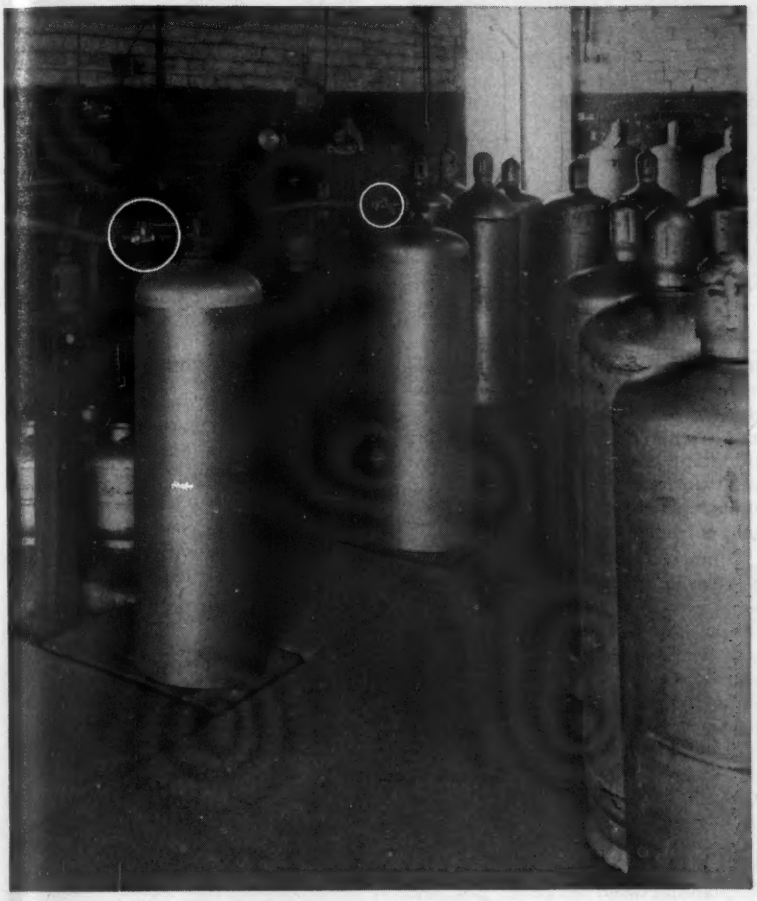
Coated with a tough, long-wearing, oven-dried lacquer finish, this new tool is available in two popular sizes: No. 2 for ⅛-in. to 2-in. pipe, and No. 4 for 2-in. to 4-in. pipe. Rugged but light, the shape has been specially engineered for added working comfort, balance, speed and easy handling.

Changes in cutting design permit power to be applied directly to the cutter wheel. There is no wasted pressure or effort. The cutter wheel, being close to the slide track of the guided block, cuts down slide block wobble, thus creating excellent tracking and a finer degree of accuracy when pipe is cut.

Beaver Pipe Tools, Inc.

3. Incinerator

A domestic incinerator, the Consum-All, which duplicates the industrial incinerator in fabric of burning chamber for permanent durability and in ability to burn everything except cans and bottles, is a new product of Cribbon & Sexton Co.,



Big propane plant reports:

"Increased production and no maintenance"

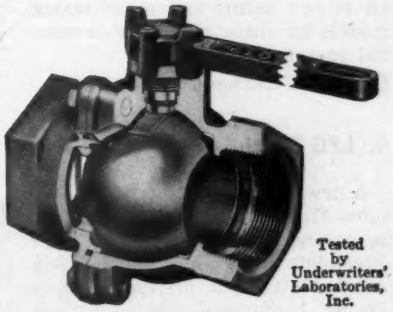
with these amazing new ball valves

One of many enthusiastic users of Rockwood Ball Valves, this large propane plant ships up to 400 tanks of bottled gas daily to householders. Valves are operated every two minutes during the day. The plant supervisor states their extra fast opening and closing, full *round* flow and tight seal makes them real production boosters and cost cutters . . . *and they need absolutely no maintenance!*

ROCKWOOD *FULL-FLOW* BALL VALVES

THE FLOW IS AS ROUND AS THE PIPE ITSELF

Safest, too! Because of their leakproof construction, Rockwood Ball Valves were selected as safest for handling inflammable gases on the Texas Transport Company's fleet of propane-butane trucks.



Tested by Underwriters' Laboratories, Inc.

4 BIG FEATURES FOR TOP PERFORMANCE

Full Round Flow . . . no change in shape or volume of the fluid stream . . . no turbulence . . . minimum friction loss.

Quick Opening And Closing . . . needs only a quarter turn, even under full pressure.

Resists Wear Longer . . . scratching, pitting and abrasion have little effect on the chrome-plated, floating bronze ball.

Stays Leakproof . . . in closed position, pressure of fluid automatically positions ball against synthetic rubber seat to form a tight seal.

Get the whole story of how this outstanding Rockwood development gives you more of what you want in valve performance. Mail the coupon today.

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ROCKWOOD SPRINKLER COMPANY
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Send me illustrated folder V-4 on Rockwood Full-Flow Ball Valves.

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Company .....
Street .....
City .....
Zone ..... State .....

manufacturers of Universal gas appliances.

The Consum-All features a firebrick lining, comparable to the lining of open hearth furnaces, which enables it to withstand extremely high temperatures. The lining does not rust or warp.

Ease of operation of the Consum-All is due to outside controls and the absence of any moving parts. The large ash pan capacity eliminates frequent emptying.

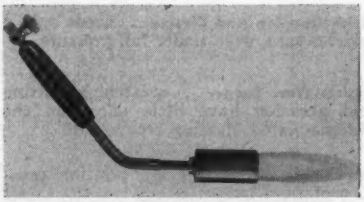
The smokeless and odorless Consum-All, designed for installation in basement or utility room, is available in three cylindrical space-saving models for either automatic or manual operation.

Cribbon & Sexton Co.

4. LPG Torch

A new, lightweight torch, the Ransome 81, for medium-duty use, such as melting lead joints, sweating large streamline fittings, lead wiping, melting babbitt, light preheating, core drying, laying and shaping asphalt tile, now is being marketed by Ransome Co.

Because there is no tank on the handle, the Ransome 81 torch may be used in extremely close quarters



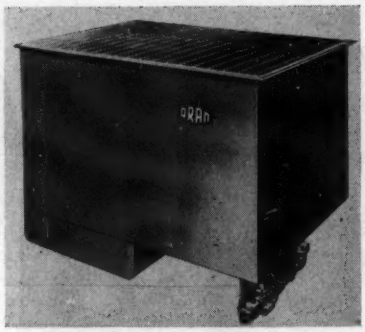
or even upside down without danger of fuel spilling. It lights instantly without priming or pumping, and weighs only 1¼ lbs.

The torch operates six hours on a single gallon of L. P. gas at 10 psi. It is 14½ in. long, has a tubular steel head 1½ in. in diameter, and 45° angle stem and polished Bakelite handle.

Ransome Co.

5. Floor Furnace

With a 90,000 Btu input rating and 67,500 Btu output, Oran's new Peak Performance Shallo-Well, gas-fired floor furnace is designed to heat the small home, with or without basement, under climatic conditions encountered anywhere in the United States. Fully automatic, the unit has



100% safety shut-off valve and all controls are completely installed, including automatic fan switch, automatic limit switch, silent operating automatic gas valve with thermostat and transformer. Oran's new built-in air circulation fan gives maximum heat output.

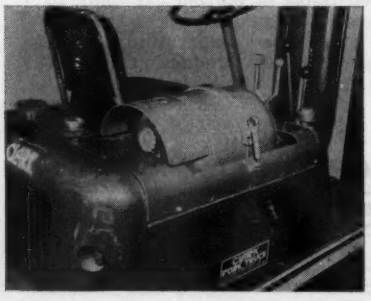
Other outstanding features of this unit include Oran's exclusive auxiliary cold air returns which increase circulation of heat, even in hard-to-heat areas; unique Oran all-steel burner which gives clean, hot flame and is the result of years of engineering research; compact size with beautiful baked enamel finish for eye and sales appeal; combustion assembly made of heavy 18-gauge steel for rigidity and long life. All fabricated er, better-built unit, and all units are A.G.A. approved for use with natural, manufactured or L. P. gas, and every unit carries Oran's 10-year warranty.

Oran Co.

6. LPG Truck

Standard model fork-lift trucks powered by LPG are now available from Clark Equipment Co.

Simple modification of the engine and installation of a compact, field-tested "conversion unit" adapts standard gasoline-powered fork-lift trucks for LPG operation. At present Clark LPG equipment is available for factory installation on Trucloader,



Clipper, Carloader and Dynatork Carloader models.

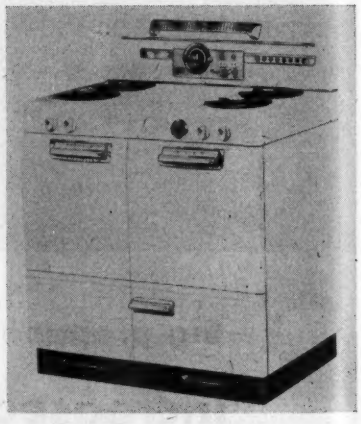
Basically, the conversion unit consists of a heavy-duty fuel tank, vaporizer-regulator and a simple, rugged air-gas carburetor. Since the fuel is under its own pressure at all times in the tank, the need for a fuel pump is eliminated. A solenoid valve automatically opens or closes the fuel line by the ignition switch, and serves as a positive lock-off when the engine is stopped.

Clark Equipment Co.

7. Domestic Range

A "perfect 36" is the description given to Magic Chef's new gas range, a deluxe piece of cooking equipment for modern compact kitchens.

Completely new from base to lamp, the range is a cleanly formed all porcelain unit with a single-piece welded frame. It has a divided cook-



broiler and full-length storage compartment. Built into its distinctive high back splash are: an electric clock-timer, a fluorescent light, double convenience outlets and the exclusive "magic oven-eye."

The range features cool plastic compartment handles and custom-molded control knobs, which lend definite individuality.

Magic Chef, Inc.

8. Mastic Rust Inhibitor

A new mastic for the prevention of rust on the foot rings of L. P. gas storage cylinders has been introduced by Royston Laboratories, Inc.

Roskote Foot Ring Mastic has been field tested for three years. Like Royston's other well known mastics,

SERVICE is part of our business. Our experienced organization gives a constantly expanding kind of service that is bringing new loads to our customers and new customers to CALOR. Yes…better see CALOR *now* and you, too, will agree– it pays to deal with the West's leading independent marketer of LP-Gas.

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it gives lifetime protection against soil corrosion due to moisture, acids, alkalies and electrolysis. It withstands heavy abrasion, and won't become brittle or sag through a temperature range of —40° to 375° F.

Roskote Foot Ring Mastic can be applied by brush or booster-type spray gun. It is non-toxic, won't harm the skin. It will not oxidize, craze, crack, alligator, check or loosen like ordinary protective paint.

Royston Laboratories, Inc.

9. Copper-Finished Range

Announcement is made by the Chambers Corp. of a new antique copper finish on their console ranges which combines decor with efficiency in cooking equipment.

The result of three years of experience and exhaustive laboratory tests, the antique copper finish does not tarnish or discolor and is easily cleaned, and will not crack or chip under normal usage.

With all the warmth and glow of copper, the finish is especially effec-

tive in rustic, Early American or bricked-in settings and is available on Chambers' low-back console range in two styles. In one, antique copper panels are combined with chromium cooking top and bright copper handles. The other style combines antique copper panels with black porcelain enamel cooking top and black porcelain hardware.

Chambers Corp.

10. Liquid Level Gauge

A new series of greatly improved Criterion Magnetic Gauges for indicating liquid level in L. P. gas or anhydrous ammonia storage tanks has been announced by the Rochester Manufacturing Co.

Designated as the 3190 series, these gauges have been designed especially

to provide rugged and reliable service under severe conditions. Special features include stainless steel head plates, interchangeable snap-on dial chambers, adjustable tubular steel support members, strengthened float rods, extruded aluminum gear yokes, and corrosion-proof steel floats.

All these features combine to produce a gauge of unusual strength and sturdiness, making the 3190 gauge suitable for installation in tanks where it may be subjected to rough treatment.

Rochester Manufacturing Co.

11. Wire Coating Applicator

The Rust-Oleum Corp., manufacturers of Rust-Oleum coating for fences, have introduced a new coating applicator, a special long-nap lambs wool roller designed to coat surfaces more effectively and eliminate waste of paint usually involved in this procedure.

With the new roller applicator approximately 99% of the material is used on the fence, with a small amount splashing on workmen and on the ground. At least 70% of the other side of the fence is coated at the same time due to the rolling action. Because of the way coating is absorbed by the wool, the roller thor-

oughly covers and surrounds the critical joints that are at each corner of the diamond square.

According to the manufacturer the new roller entails important savings on material as well as cutting in half the time needed to coat the surface by ordinary methods.

Rust-Oleum Corp.

12. Stock Waterer

A new LPG stock waterer for pressure system, pump jacks or gravity flow is being manufactured by Fairfield Engineering Co. Called the "Stock-O-Matic," it is fully automatic and non-freezing and offers all the advantages in fuel savings and clean burning of LPG operation.

The main water tank of the "Stock-O-Matic" is of porcelain, with cabinet of 18 gauge heavy galvanized sheet steel. With specially designed cast

iron hog drinks the "Stock-O-Matic" provides plenty of fresh water for up to 200 hogs or 100 head of cattle.

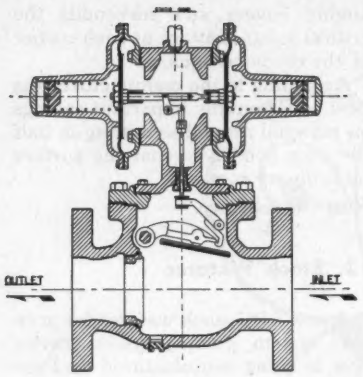
Fairfield Engineering Co.

13. Shut-off Valve

Security Automatic Shut-Off Valves, available from Security Valve Corp., provide automatic safety shut-off control in the event of either increase or decrease of pressure in pipe lines transmitting either liquid or gas.

Models are available for either high or low pressure operations, in either steel or cast iron, as required. It is claimed that the thru-flow design insures negligible pressure drop. Sizes are in even inches from 2" to 8".

The model illustrated shuts off in response to either increase or decrease of pressure beyond the minimum and maximum for which it is adjusted. Other models respond only to increase or to decrease in pressure.



Security Automatic Shut-Off Valves are widely used in the oil, gas and chemical industries where such safety control is needed in transmission pipes.

Security Valve Corp.

14. Motor Fuel Tank

L. P. gas motor fuel tank for 1953 Ford tractors. Two types are manufactured: one to replace the gasoline tank; another mounts behind the driver as shown above. Both tanks are complete with all brackets and fittings, and ready for immediate delivery.

American Tank & Manufacturing Co.

15. Gas Range

A new gas range with a spacious 24-in. oven that will cook a meal for over 30, yet requires a floor space of only 30 in. wide, now is being produced by Tappan Stove Co. and is called the Tappan "Holiday."

The "Holiday" provides in a very compact range features formerly available only in much larger ranges. Among the conveniences are matchless lighting of all burners and a broiler located at waist-high level.

Indicative of the deluxe "big range" features that Tappan has built into its 30-in. "Holiday" is the Visualite oven, which permits the user to watch baking by means of a pane of glass set in the oven door and a push-button switch which illuminates the interior. Other features are a clock, a 3½-hour timer, a fluorescent top lamp, a full-width storage drawer, and utensil supports, reflector trays and drip trays.

Tappan Stove Co.

16. Garbage Disposal

The Coroaire Heater Corp. announces the new "Coronator" gas-fired garbage and rubbish disposal unit which is a superior gas-fired incinerator with a two stage burner (2000 and 3000 Btu).

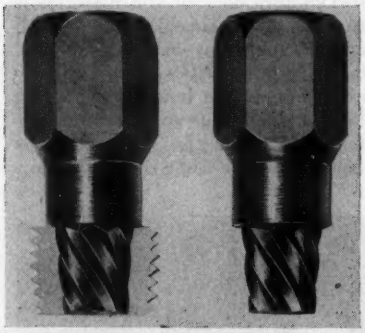
Built with precision tools, the new unit is of an exceptionally attractive design and rugged construction. The interior compartment is made of extra heavy fire resistant steel insuring many years of service.

The Coroaire Heater Corp.

17. Extracting Tool

A new extracting tool that removes threaded broken parts without wedging them into place is now being marketed by the Roddick Tool Co.

The extractor is made to work with any fitting in the pipe, hydraulic, aircraft, plumbing or mechanical fields and is now available in a range of 20 sizes. Sizes ⅛-in. to ⅞-in. by 1/32-in. complete the Roddick extractor line.



The Roddick extractor is designed to form teeth inside the hole until the shoulder contacts the part and permits a high torque without expanding the part. Manufactured of fine steel, carefully heat-treated, the extractors are extremely strong and easy to use. The large hexagon head of the extractor can be firmly gripped and turned with any wrench.

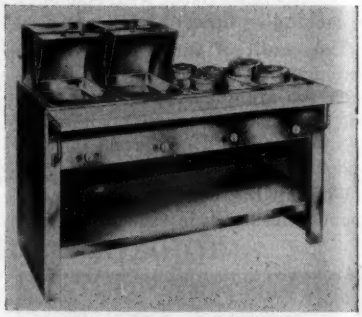
Roddick Tool Co.

18. Food Serving Tables

The Star Metal Manufacturing Co., Inc. produces a complete line of hot food serving tables for restaurant, cafeteria and institutional use.

The tables, available for use with LPG, feature individually heated compartments, interchangeable top panels and an insulated modern base. Compartments may be instantly changed from dry heat to water heat by inserting a removable "Change-a-Pan," an optional Star Metal feature. This enables the operator to maintain each food in its own individual type of heat, either wet or dry.

The "Hotables" are constructed of stainless steel or galvanized finished



in Startone grey. Top panels are of polished stainless steel, and such optional features as roll warmers, overhead shelves, plate shelves, sliding doors, etc., may be included.

Star Metal Manufacturing Co., Inc.

Product Information

19. Data On Flexible Hose

Edited to satisfy both the engineers' and purchasing agents' want for information, this compact, yet complete, data book includes information on application, temperature ranges of various types of metal and wire braided hose, dimensions, couplings, assemblies, etc. Types of Universal flexible metal hose illustrated and described therein include seamless all-metal flexible pressure hose; interlocked suction, blower and conveyor hose; square-locked conduits and flexible spout tubing; high pressure hydraulic hose; double wire-braided hose for high pressure; single wire-braided hose for medium and low pressure; and others for special applications of vibration elimination, steam, gas stove connectors, etc.

Copies of the new Data Book are available on request.

Universal Metal Hose Co.

What Stopped Her?

THE

New Empire

Gas

HEATING APPLIANCES

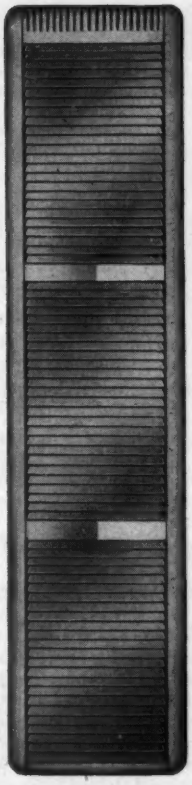
IT'S COOL! IT'S COOL!

GAS FLOOR FURNACE

NO BOOM! NO BANG! NO TICK!

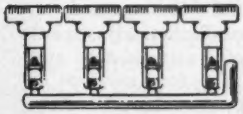
GAS COOL CABINET RADIANT CIRCULATOR HEATER

When you think of the comfort the new Empire Gas Heating Appliances give . . . the convenience they add . . . and, the time, trouble, and expense they save . . . it's easy to see why folks speak so glowingly in their praise. For here are heating appliances that are easy to install, and simple to operate. They do not require complicated adjustments or costly servicing. It's no trouble at all to keep them clean.



GAS RECESSED WALL UNIT

THE FAMOUS



Gas

BURNERS

SILENT AS A KITTEN WITH AN EXTRA SET OF FOOT PADS

"Thriftmatic"

EMPIRE

STOVE COMPANY

BELLEVILLE, ILLINOIS

WORLD'S LARGEST MANUFACTURER OF *Gas* FLOOR FURNACES

20. Tube Fittings Catalog

A new, enlarged catalog covering tube fittings and shut-off valves, brass pipe fittings and tubing tools for plumbing and heating, oil burner, L. P. gas and city gas applications, has been issued by The Imperial Brass Manufacturing Co.

Among the new items shown in this catalog are heavy duty, lever-type tube benders for various combinations of tubing sizes, gear-type tube benders for bending either hard or soft drawn tubing and a slide-to-size tube cutter for cutting large sizes of tubing.

The 28-page catalog includes a showing of Imperial's line of "Kwik-Tite" compression fittings and flared tube fittings and describes convenient cabinet stocks of fittings. It has complete information on the "Rol-Air" flaring tool which both flares and burnishes tubing.

A copy is available on request.

Imperial Brass Manufacturing Co.

Furnace and Torch Catalog

Mutual Liquid Gas Equipment Co., Inglewood, Calif., has just published a new catalog — No. 993 — which covers the company's industrial furnaces and torches.

Newly Published

Water Heater Manual Published by AGA

The fourth edition of the Gas Appliance Service Water Heater Manual has been published by the American Gas Association.

A useful tool for the gas appliance serviceman, the new edition of the Manual includes the latest in controls, and contains information on the selection, installation, adjustment and servicing of water heaters and their controls. The four sections of the book have been reviewed and revised to bring the text in line with current industry thinking and practices as outlined in ASA Z21.30 "American Standard Installation of Gas Piping and Gas Appliances in Buildings."

The text of the Manual has been designed so as to eliminate unnecessary duplication between diagrams and text, with the majority of the service information placed on the diagrams to facilitate the correlation of this information with the control.

A pocket-size edition containing 248 pages bound with metal ring binders to allow for insertions, the Manual is priced at $2.00 for single copies, $1.75 for 10 to 99 and $1.50 for 100 or more.

Installation Guide Issued By AGA

A Guide for Installers of central heating systems, conversion burners, floor furnaces, vented space heaters and unit heaters is available in booklet form from the American Gas Association.

The "Guide," sponsored by the Gas House Heating Committee, Residential Section, of AGA, contains installation instruction, recommended practices in compliance with the requirements of regulatory agencies, tables and comprehensive cut-away illustrations.

Copies may be obtained for 50 cents each by writing American Gas Association, 420 Lexington Ave., New York 17, N. Y.

Helpful Handbook Covers Venting Installation

A valuable handbook explaining the basic principles of gas venting and how they affect the installation of vents has been released by the Metalbestos Division of The William Wallace Co.

The 76-page book of pocket size covers the proper procedures of venting and solution of problems usually encountered. Information is based on a thorough scientific investigation of gas venting recently completed by Alan Kinkead, president of the William Wallace Co., with the assistance of the Stanford Research Institute. These findings established, for the first time, the fundamental laws which apply and the mathematical relationships which govern the design of a proper venting system.

The Handbook contains practical rules and recommendations, vent capacity tables and comprehensive illustrations, and is available from the Wallace Co., Belmont, Calif.

Larger Quarters For Washington Firm

Proflame Gas Co., Omak, Wash., recently celebrated eight months of successful operation by moving into a new building at 17 S. Ash St.

According to George H. Gray, manager, the firm will soon furnish a section of the new building as a home economics demonstration center, and the salesroom will be made available for group use in staging bazaars.

Evidence of the widespread use being made throughout the industry of the "Let's Make Safety Everybody's Business" series of articles currently running in "Butane-Propane News" is provided by this story about Imperial Gas Co., Los Angeles.

BPN Safety Program Highlights LPG Dealer Meeting

By Lorna Lennox
Imperial Gas Co.
Los Angeles, Calif.

THE Imperial Gas Co., which markets "Rockgas," has a policy of inviting the managers of its eight retail locations and its plant superintendents to the Los Angeles office at regular intervals for a company meeting.

The meeting on Saturday, May 23, was devoted to the study of safe practices in the industry. It was based primarily on the series of articles currently running in "Butane-Propane News."

Following the chronological sequence of the articles, the meeting started off with a demonstration of the physical properties of the two gases, butane and propane. M. L. Jensen, superintendent of the Huntington Beach plant, put on the demonstration with a special mobile kit which he had prepared. He used two small tanks, one a 2½-gal., low-pressure butane tank and the other a propane tank of the same size which he set up at a safe distance from the building. He had with him especially designed test tubes which he filled simultaneously with the two liquids. Because of the volatility of the propane, it took longer to fill the propane tube, and some of the boiling liquid splashed onto the ground.

With the use of a minus Fahrenheit thermometer it was possible to observe that the propane became inactive at about 44° below zero and the butane at about 32° above. Of course, at this point, the test tubes were completely covered with a thick coating of ice. Each of the men then took turns holding the cold glass tubes until the outside temperature was sufficiently high to start the gas boiling off. It was a strange thing to see how long this took, especially as we were standing in the bright sunlight with the atmospheric temperature at about 70°.

Lorna Lennox

Once the vaporizing process had started, it was interesting to note how much more quickly the propane dissipated into the air than did the butane. The demonstration clearly showed why it is advisable to use propane in cold weather and for those applications where heavy withdrawals of fuel are made without the use of a vaporizer.

After a few minutes the only thing left in the test tubes was a slight trace of an inert yellow liquid—the heavy ends which do not boil off even in the carefully refined product with which we were making the demonstration. Mr. Jensen explained that most producers are now using a volatile odorant which will burn off with the gas, thus preventing the ob-

Front row, left to right: Donald Wheeler, manager, Sacramento; Rolland Beelard, manager, Yuma, Arizona; George Brkich, L. A. office; Willis Hurst, Palmdale; Bob Meyer, manager, Vacaville; W. W. Gilmore, manager, Palmdale. Back row, left to right: Durwood Hutchinson, superintendent, Richmond; Frank Phillips, manager, Bishop; Lorna Lennox, L. A. office; Dick Johansen, manager, Sunnyvale; Fred Higgins, manager, Hemet; Jack Geiger, manager, Malibu; and Philip Koch, L. A. office.

This year–

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with TEMCO Gas Floor Furnaces!

With the great new 1953 line of TEMCO Automatic Gas Floor Furnaces . . . with the king-sized 1953 TEMCO advertising and sales promotion plan to back you up . . . you can make a clean sweep of the floor furnace business in your area. TEMCO sales features like these make it easy to get the jump on your competition:

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- **TEMCO Gas Floor Furnaces are specifically engineered and AGA approved for use with all gases.**
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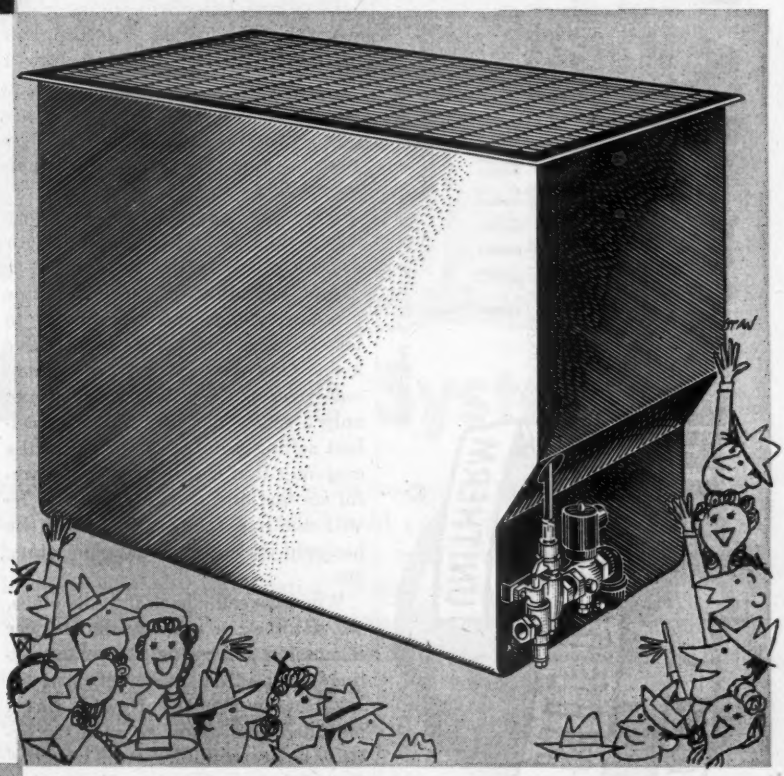

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NASHVILLE, TENN.
BUILDER OF OVER 1,250,000 GAS APPLIANCES

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Marvell L. Jensen, branch superintendent, conducts demonstration to show physical properties of LPG.

jectionable accumulation of odorant in cylinders.

Of course, one of the things which we watched carefully was the drift of the gas through the air before it was completely dissipated. We commented on the upper and lower limits of flammability, but no one suggested testing his knowledge by lighting a match.

After the gas was all gone, we asked Jack Geiger, manager of our Malibu plant, to put on a simple demonstration of the use of a line pressure gauge and manometer to test for line and appliance valve leaks. One observation from the men was that making these tests is not only a safety measure but an excellent selling point, too. It shows the customer that he can anticipate careful service and assures him that he will not lose the gas for which he has paid through leaking pipe joints, etc.

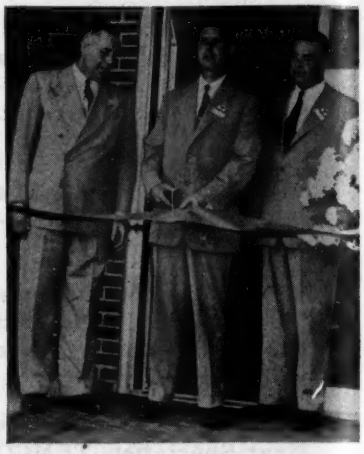
When we came back into the office, we started a question-and-answer discussion, following the plan outlined in the first four safety articles in "Butane-Propane News." Each man had been asked to read the articles as preparation for the meeting. One of the comments was that understanding and complying with local city and county ordinances was much more of a problem than merely following Pamphlet 58. We distributed copies of LPGA Pamphlet No. 1 on Recommended Good Practice Rules for LPG to all who did not have them, and ascertained that each man had the latest copy of Pamphlet 58.

At the close of the meeting the branch managers were instructed to develop safety programs within their own organizations, following the plan outlined in "Butane-Propane News," and demonstrated at the branch managers' meeting.

American Meter Opens New Nebraska Plant

Almost the entire population of Nebraska City, Neb., as well as visitors from nearby communities, turned out to celebrate the formal opening day of the new displacement meter plant of the American Meter Co. recently.

After a flag raising and ribbon cutting ceremony, the doors were opened for public inspection of office and production facilities. The ceremonies were broadcast on local radio and television programs. Refreshments were served and the day's festivities were concluded by a square



William G. Hamilton, president, American Meter Co., cuts ribbon at opening day ceremonies of new plant in Nebraska. Nebraska City Mayor Bremmer (left) and Arthur F. Benson, vice president of firm (right) look on.

dance held in the plant. The huge turnout was indicative of the widespread interest and support of the people of Nebraska City and the importance of the new plant to the community. An "open house" on the second day was held for gas company officials and prominent citizens of Nebraska City.

The new plant, part of a continuing expansion program, adds 48,000 sq. ft. of space devoted to displacement meter production to American Meter Co.'s nationwide network of plants serving the gas industry. Buildings and all equipment are completely up to date. New equipment includes modern automatic machines and precision equipment that utilizes the latest advances in powdered metal technology.

The company now has 10 plants in strategic locations in the United States and Canada.

Paying Off For Dealers 3 Ways:

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2. Easy To Install
3. Easy To Service

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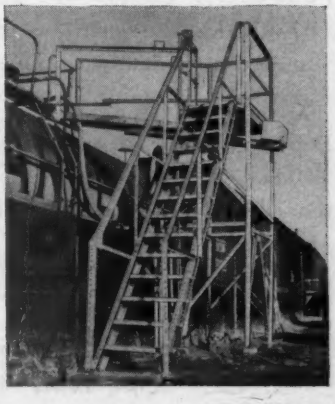
Perfection Propane Systems give you important sales features to help you move them fast! The uniform, X-ray controlled weld makes for extra strength *plus* a smooth, neat appearance. What's more, *you'll* like the way the sturdy lifting lugs are scientifically located for ease of handling. All 500 and 1,000 gallon sizes are equipped with ¾ in. excess flow valve for liquid withdrawal, and 1¼ in. bottom opening for greater liquid flow, if required. Easy servicing. Yes, PERFECTION Systems live up to their name in every way. Stock and sell BS&B Propane Systems—available in 250, 500 and 1,000 gallon capacities. U. L. approved.

PROPANE
OUR 60TH YEAR
BS&B
SYSTEMS

BS&B Unloading Rack

Reduce fire danger to a minimum! New BS&B Unloading Rack stops awkward unloading, makes walking sure and safe. Needs only small space, has ladder or stairway on left side, right side or front as you order. Loading rack folds out of way. Shipped knocked down, cut and marked for easy erection.



BLACK, SIVALLS & BRYSON, INC.

Propane Equipment Division
7500 East 12th Street

Department 6-AB8
Kansas City 26, Missouri

Industry Can Help in Solution of Insurance Problems

HOW members of the liquefied petroleum industry can work to solve insurance problems and reduce premium costs was the subject of a talk by S. G. Pryor, III, Hartford Accident and Indemnity Co., at the recent annual distributors' convention of Green Fuel, Inc., held at Asheville, N. C.

After reviewing the history of the industry and various stages through which it has passed, Mr. Pryor concluded with some specific suggestions as to how the industry can cooperate with and improve its record with insurance companies.

"There are just two ways to have good experience," said Mr. Pryor, "either get sufficient premium or have fewer losses.

Dealer Decides Rates

"Premium is governed by the experience of an industry within each state and is generally set by the state or some rating bureau. From this standard rate, your rate can be varied according to your good or bad experience subject to the approval of the state or bureau. Therefore, you make your own rates and the insurance company has very little or no control over them.

"Where the insurance companies can help and where they are doing extensive work is in trying to lower the losses. Insurance engineers have had to learn a great deal about LPG in an effort to help the dealer control the losses. And, gentlemen, the dealer is the only one who can control them. The engineer is a trained specialist who can point out the violations of the pamphlet and other good practices to you, and he can help you train your personnel in the safe handling of LPG. By pointing out the violations of the pamphlet and good practices to you, he is letting you know that your employes are deviating from the rules of good practice. This should be a valuable aid to you in supervising your employes.

"Insurance engineers can do all of this, but if you as a dealer don't do something about it, then the losses will not be reduced to any extent. Engineers are provided by the insurance companies for your benefit, they are required to learn about LPG for your benefit, they are required by their companies to contact you periodically in order that they might point out those things which will benefit you and your industry; but they cannot wave a magic wand over your head and reduce the losses or cut out the accidents. Unless you correct the accident-producing conditions that are pointed out to you, the losses will continue to advance instead of reduce.

"Unfortunately, most dealers do not recognize the insurance engineer as the one I have described. They feel that he only wants to find a few things wrong and run back and tell his company, so they can raise the rates, threaten cancellation, and keep the situation generally upset.

"If you don't know the insurance engineer as I have described him then you have missed the advantage of his service. His job and sole purpose in calling on you is to help you reduce the accidents and the accident possibilities.

Insurance Engineer Can Help

"The final question now is, what can the dealer do to help this situation? I would like to emphasize here again that the engineer has but one purpose when he contacts you and that is to help you. When he finds a deviation from the provisions of Pamphlet 58 and other good practices and points it out to you, it is logical to assume that you, in the same way could find many more. These violations of good practices should be hunted down and corrected by you and your organization, for only in that way will the all be found. The industry with its many service schools is doing a fine job in an effort to better train LPG service personnel, but all of this training will go for nought unless you as dealers follow up this valuable service and demand that the practices be followed.

"There are many other things that can be done to help the situation. You should have full knowledge of your entire business at your fingertips. By that I mean that you should have a complete set of records on every installation that you serve. You should

have a record of the type and size of tank; the location of the tank; the location of the appliances; information as to whether or not the appliances are vented, and if not why not; who installed the system; the number of service calls; the reason for the calls; what was found out during the calls, and what was done about it, including specifically what tests were made.

You should record the vapor pressure of the gas placed in the container, measured at 100° Fahrenheit. You should have a periodic inspection of your new installations and a sufficient number of old installations to make sure they are in good shape and that all requirements have been followed. A record of those inspections should also be made. You should keep a continual check on all of your bulk plant equipment and on all of your trucks to make sure that they are as they should be. These equipment checks should be on your records.

"The road to solve the insurance problem is not an easy one nor is it short. It is not only the dealer's problem, it is the industry's problem. Only the dealer, however, is in a position to do anything about the situation.

"In conclusion I would like to say that the overall picture of the industry accident-wise is not good. But the situation is far from hopeless. The industry and the insurance companies are working hand in hand doing everything they can, but they are in dire need of help from not just a few dealers but from every dealer of liquefied petroleum gas. In order to help this situation, each LPG dealer should first of all make sure that the service and installation employes have sufficient training and sufficient knowledge of the requirements and are properly supervised on each job.

"Second, each dealer should re-inspect every one of the old installations, making notes for records and correcting them if they do not come up to the standards of Pamphlet 58 and other good practices. Third, they should demand that all new installations be installed with all of the requirements of Pamphlet 58 and other good practices being followed.

"Fourth, a complete set of records should be kept of each installation and of all the equipment of a dealer so that he will have his entire business on record at his fingertips. Fifth, he should require that Pamphlet 58 and other rules of good practice be followed in all the work that is done. Sixth, each dealer should demand that these first five steps be followed.

"The insurance engineers will continue to point out the things which they feel will make your operation a better operation, but unless you are following these six steps I have named and unless you use the engineer to your advantage, you will be trusting to luck to lower your losses and your rates.

"Two pamphlets, NFPA Pamphlet 58 and LPGA Pamphlet 1, contain some wonderful standards. Read them, believe in them, know them, preach them, do everything in your power to make your competitor believe in them, and follow them diligently yourself, and that clean blue flame of LPG will burn brighter and safer for all of us."

Group of distributors arrive by air for Northwest Conference of Calor Gas Co., San Francisco, which was held in Spokane, Wash. More than 100 distributors and guests attended the two-day meet which covered problems and new developments in the LPG industry.

Loads That Are Overlooked

By Al H. Cote

General Sales Manager
Suburban Propane Gas Corp.
Whippany, N. J.

EVERYTHING we do has a direct relationship to time and space. Now what has this to do with the L. P. gas business and with us who devote our energies to this industry?

A. H. Cote

At this moment, some of you* seated in this room are lighting cigars or cigarettes with a flame produced by the L. P. gas in your lighter. It is probable that the tobacco in your cigar was cured by L. P. gas in a shed on a Connecticut farm, or possible that the tobacco in your cigarette was toasted by L. P. gas in a barn in the Carolinas.

Does this represent a contribution on the part of our industry in overcoming time and space? It seems to me that it does. A small quantity of L. P. gas can be carried in your pocket where it is immediately available. On the other hand, large quantities can be made available at remote locations.

In our day efforts to promote increased use of our product and our service, to describe the virtue which makes our product able to supply such divergent needs, cause us to use the word "flexibility."

To me this means that L. P. gas can do more in more places than any other fuel. Let's look, for example, at tobacco curing. There is just about as much difference in the handling of Shade and Havana seed tobaccos which are used in cigars, and bright leaf tobacco which is used in cigarettes, as there is between cigars and cigarettes themselves.

Due to the expense involved, the shade tobacco of Connecticut and Florida is grown principally by large corporations which have resources in the millions of dollars. The soil is sterilized, tested for its fertilizer requirements and manicured to a degree unknown in most farming operations. The tobacco plants are individually transplanted in the field and protected from the direct rays of the sun by acres of cloth suspended on poles.

There is a good reason for all this preparation, since a pound of top grade shade grown tobacco is more valuable than the finest beef. The average price is usually about $4 per pound, while a pound of top grade tobacco will bring out bids of $7 at auction.

This tobacco requires controlled temperature and humidity for proper curing. For many years this was accomplished by burning charcoal, which in recent years has cost up to $90 a ton. Charcoal was used because it was the cleanest burning of available fuels.

Better Tobacco with LPG

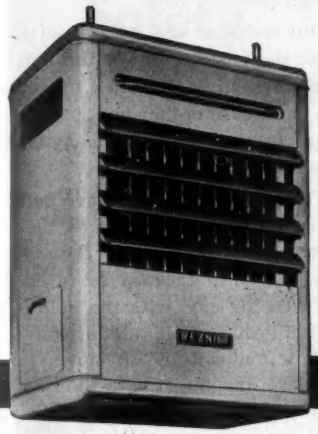
When, in 1950, equipment became available for some small scale experimental curing with L. P. gas, it was found that a better quality tobacco was obtained because of cleaner burning and better heat distribution. This, alone, was enough to justify the replacement of charcoal by L. P. gas. Additionally, there was a substantial reduction in labor. Night watches formerly needed to keep the charcoal fires fuelled were eliminated, as was the necessary "totin" of bags of charcoal to the various sheds, and, even better, there was a substantial reduction in fuel costs. Recent figures place this saving at $15 per acre. Dr. Anderson, who headed the research activities at the Connecticut State Experimental Station for over 30 years, told me that in all that time he had never seen faster acceptance of a new development by tobacco farmers than was the case with L. P. gas curing.

Bright leaf tobacco, the principal

*A paper read before the Marketers' Section of the LPGA during the May convention.

wherever you look-2 out of 3 are

REZNOR
GAS UNIT HEATERS

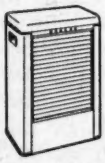


● You owe it to yourself! See why Reznor sells more gas unit heaters than any two other manufacturers combined! And, once you check over the special value points highlighted below, we think you'll agree . . . now's the time to take advantage of another big Reznor selling year just under-way.

ARE YOU SELLING AMERICA'S MOST WANTED HEATER?

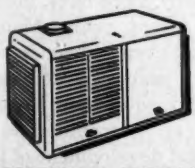
8 PRACTICAL SIZES

Reznor Suspended Unit Heaters, built with the exclusive "Air Form" Aluminized Reznor Heat Exchangers, are available in eight different sizes from 25 to 200,000 BTU. Each model is available with either propeller type air mover or centrifugal blower. Also, there's a complete line of Reznor Floor Heaters, Duct Furnaces and Horizontal Furnaces to meet every heating requirement for offices, stores, homes and industry. Get the facts today!



ROOM HEATER

DUCT FURNACE



HORIZONTAL FURNACE

FAN & LIMIT CONTROL
Limit control is installed in diverter chamber. Fan control delays operation of fan until heated air is warm enough for forced circulation.

BUILT-IN DRAFT DIVERTER
Bolted to top header plate. Shape prevents condensation and fuel moisture from spilling back into tubes. Relief openings at sides of unit.

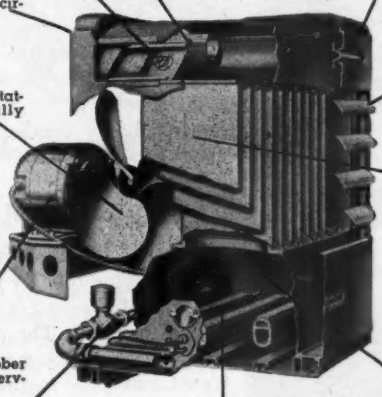
BODY
Auto body steel, dieformed and oven finished in remarkable Reznor gray-green Perlite.

MOUNTING PIPES
(NOT SHOWN)
Connectors are welded to and carry the weight of the heat exchanger.

SUMMER-WINTER SWITCH
All units are equipped with switches for summer air circulation.

LOUVERS
Individually adjustable, radiused, air-stream style.

PROPELLER FAN
Aluminum, quiet blade, statically and dynamically balanced.



CENTRIFUGAL BLOWER
(NOT SHOWN)
High efficiency, double inlet, "squirrel cage" type. Blower mechanism is cushioned in rubber and fire-resisting felt material. Available on all models.

HEAT EXCHANGER
Seam welded aluminized steel tubes (Reznor was one of the first to accomplish a weld on aluminized steel). Resists indefinitely corrosion from products of combustion.

MOTOR
Top name, oversize, rubber mounted, dependable service, 860 to 1150 R.P.M.

CONTROL MANIFOLD
Completely removable unit of balanced element, connected on both ends by unions.

BURNERS
Fine gray cast iron. Slotted or drilled ports for specifications of gas to be used. Easily removable through drop-away service panel on bottom.

COMBUSTION CHAMBER
12-gauge furnace steel attached with leakproof connection to bottom header plate.

Automatic CENTRAL OR UNIT CONTROL!!!

Reznor Suspended Type Unit Heaters are perfectly engineered to accurately and economically maintain desired temperatures. Heat is manufactured right where it's needed and may be regulated by individual or group-action thermostats. Reznor Unit Heaters provide equal performance efficiency with natural, manufactured, mixed and LP gases.

REZNOR
WORLD'S LARGEST-SELLING GAS UNIT HEATERS

REZNOR MANUFACTURING COMPANY
9 Union St., Mercer, Pa.

Please send information on Reznor unit heating.

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CITY_____ ZONE_____ STATE_____

filler for cigarettes, is grown in the South by small individual farmers, many of them tenants, as a cash crop. few acres of tobacco because of the Most such farmers can raise only a large amount of hand labor required. The quality requirements are much less stringent than is the case with shade grown tobacco and the price reflects this. Bright leaf sells at about 50 cents per pound.

Curing of bright leaf requires higher temperatures and the quality of the tobacco is less affected by the combustion properties of the fuel. The primary advantage of L. P. gas is in labor saving, although there is a growing recognition of the better quality leaf obtained through curing with a clean burning fuel. Lower tobacco prices and smaller savings have made for a slower acceptance of L. P. gas curing in bright leaf areas, but the potential market is much greater than in shade tobacco areas.

The sheds used for curing cigar wrappers measure up to 120 ft. by 40 ft. and may require inputs of as much as 2½ million Btu per hour, while bright leaf barns are generally not over 24 ft. by 24 ft. with a correspondingly smaller heat requirement.

High Seasonal Demand

The problem facing the marketer in supplying fuel for this application is one of meeting a very high seasonal demand. The curing season starts in July, reaches a peak in August and ends in the early part of September.

To meet this varying demand properly requires considerable equipment and careful planning to utilize it at maximum efficiency. The economics of proper pricing for seasonal loads also require a good deal of study if this business is to be handled at a profit.

These problems which have been successfully handled by a number of L. P. gas marketers are insurmountable to the electric industry or to the natural gas people because they lack the necessary flexibility to quickly and economically meet the requirements of the tobacco grower.

Most tobacco growing areas are scattered throughout the East from Ontario to Florida. If tobacco is grown in the area you serve, it may well be deserving of your attention. The summer usage offers a good load balancing potential, but bear in mind that you must be equipped to handle a high seasonal peak.

Our industry can successfully serve the tobacco grower through its inherent ability to better overcome the limitations of time and space than other fuels. There are many other illustrations of this ability.

For years fishermen have set up tents and portable shacks on the ice of our northern lakes for winter catches. Until recently, they either endured the cold with the help of a little internal stimulation or suffered with a malodorous oil stove. Now they fish in comfort with the help of L. P. gas fish tent heaters. Perishable products are safely hauled in zero weather by truckers using L. P. gas cargo heaters. The plumber has largely discarded the gasoline blow torch in favor of L. P. gas fired torches and lead furnaces.

LPG's Diversified Uses

Hay and grain crops are dried in the field even in the rain with L. P. gas dryers. L. P. gas chicken brooders have now won such wide acceptance that in 1952 more of these brooders were put into use than brooders using all other types of fuel. L. P. gas torches are cutting steel better and more economically than acetylene for a growing number of users. Stock tank heaters fuelled by L. P. gas are helping to increase milk and beef yields. L. P. gas pig brooders are proving their worth. Railroads are maintaining schedules through blizzards with L. P. gas switch heaters. L. P. gas dairy sterilizers are ensuring good health. Painters are saving time with L. P. gas paint burners. Tar kettle heating with L. P. gas is helping the roofers.

All of these specialized applications, and many more have, been developed in recent years. Many of these were not even a gleam in someone's eye five years ago. Marketers, producers and equipment manufacturers have all contributed to the conception and development of these applications and some have come from users who were dissatisfied with inefficient, non-automatic fuels. Many more such dissatisfactions still exist which can be met through new applications for our product and our service.

Follow Safety Codes

To Protect Industry Record

By Paul W. Tucker*

THE liquefied petroleum gas industry is in business because it sells a product that will burn. It burns with great heat, it is clean, it is convenient and is readily adapted to a multiplicity of uses. These qualities, mixed with the vision of the industry's pioneers and sales enthusiasm of their followers resulted in the now well-known story of phenomenal growth. However, it is wise for us to keep in mind that the one chararcteristic responsible for there being such an industry is also its greatest hazard —the fuel has combustible qualities.

In other words, the industry is in the business because its members have a product to sell which will burn and produce heat. This same product, if allowed to escape uncontrolled, can, if ignited, cause damage.

So, what is the industry's interest in fire safety? I'd say that its interest in safety is as great as the value its members put on their business—and the "stakes" are even higher.

What, then, is the industry doing to promote safety and fire safety? You are, of course, familiar with the continuing, never-ending work of the LPGA Technical and Standards Committee and the National Fire Protection Association's own Committee on Gases to maintain safety standards up to date commensurate with engineering and utilization advances of this day. This work is all very important and a vital force in our industry today. It is, however, only a guide post and starting point for the "grass roots" effort where the safety and fire protection efforts really pay off.

Safety and fire protection or fire safety are practically synonymous in the light of our present discussion and the efforts expended in their ad-

*Mr. Tucker, technical representative for the Phillips Petroleum Co., Bartlesville, Oklahoma, delivered this talk at a regional meeting of the National Fire Protection Association in Houston, Texas.

vancement are of two types:

(1) Education and

(2) Physical installation of mechanical devices to prevent a hazard from developing or to minimize the consequences if one does develop.

The education of which I speak is an extremely broad campaign that is being carried on by all segments of our industry and even by others outside it. It includes the dealer who holds schools or training programs for his personnel. Such training programs includes instruction on characteristics of L. P. gas, proper handling techniques, and proper installation, maintenance and service techniques—all of which are fundamental characteristics of a good safety program. It includes local, state and national segments of the Liquefied Petroleum Gas Association, which sponsor service schools where characteristics of the gas, proper installation, maintenance and service procedures are again reviewed to keep the industry informed of latest engineering and safety advances in the field.

It includes the major producers, who carry on a continual service and educational program with their customers. It includes the state fire schools wherein the industry participates to better inform the firemen as to the characteristics and proper handling procedures of the fuel along with recommendations pertaining to L. P. gas fire control. And, last but not least, are the many local fire demonstrations put on by the L. P. gas dealer for the benefit of his local fire department. It is recommended that every such dealer and bulk distributor continue periodic fire fighting demonstrations and start them where none has been held in the past.

Such demonstrations create good will for the LPG distributor with his fire department and other regulatory officials. It is of definite value for the distributor and for the fire dedepartment as well. It gives the fire departments a chance to know at first hand how the fuel acts, how it burns, and how to properly extinguish or control such fires.

The second type of effort expended for the advancement of fire safety is the physical installation of mechanical devices to prevent a hazard from developing or to minimize the consequences if one does develop. It should be recognized that the first and perhaps the most important feature of this effort is to be found in the proper installation of the L. P. gas system. Proper installation includes attention to such detail as use of the site to best advantage, maintenance of proper distances, use of high quality pipe with adequate provision made for expansion and contraction, the use of piping as small as practical, use of adequate excess flow check valves or remotely operated automatic valves, etc.

Proper fire protection would include adequate supply of water and pressure with hose adequate to reach all parts of the plant and the placement of 20- to 30-pound dry chemical extinguishers at strategic points throughout the plant. Dry chemical extinguishers are carried on the trucks as well.

The tremendous and consistent growth of the liquefied petroleum gas industry reflects not only its adaptability for all types of application where heat is required but indicates a widespread acceptance by the general public as well. There seems little question but what this remark-

able growth would not have been possible had not the pioneers in this industry insisted on emphasizing safety. They realized that marketing efforts would be in vain unless they first determined and then practiced the safest methods of handling, transporting and utilizing these gases. To that end they cooperated with all governing and interested bodies having jurisdiction in establishing and promulgating safety rules and practices.

The industry is still learning new lessons and better ways of carrying out its operations. There are some in regulatory and insurance circles as well as a few isolated industry people who are advocating that tanks be:

(1) Totally buried.
(2) Totally insulated.
(3) Completely water sprayed by an amount of water equivalent to 700 gallons per minute per 30,000-gallon tank.

Good Design Essential

There are those who think such requirements are the cures for all ills. This is not the case. There is no substitute for competent design and engineering. This is a cardinal prerequisite and there can be no substitute.

Granted it may be that in a few cases local conditions may indicate the desirability of considering one of these additional safeguards but there is nothing to dictate that such radical requirements be imposed in a wholesale revision of the standards and regulations.

We believe that where very large storage installations are involved each of these should be given careful individual study and consideration and the design and layout be made so as to utilize the site to best advantage from the standpoint of safety. Adequate provision must be made for pipe expansions, contraction and vibration. Provisions must be made against differential tank settling.

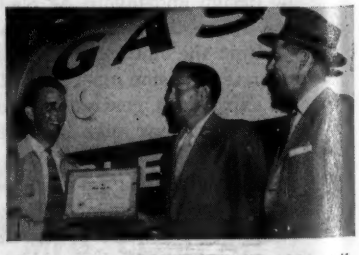
Other considerations for these large installations might include size and quality of pipe, use of double-acting excess flow check valves in long lines, venting or deflecting the bleed hole in the relief valve, testing and replacing relief valves every five years. It will be noted that most of these points merely amplify the provisions already contained in the cur-

rent industry standards.

You will be interested to know the industry through its Technical and Standards Committee of the Liquefied Petroleum Gas Association has underway at the present time a series of studies which will eventually be reflected in changes in Pamphlet 58. These include such items as the use of L. P. gas as a motor fuel, L. P. gas at service stations, manifolding together of large storage containers and many other basic studies which concern the fundamental engineering principles underlying the storage and handling of liquefied petroleum gas.

The American Gas Association has, through its LPG Utility Code Committee, undertaken studies which will be reflected in changes to Pamphlet No. 59, which is, as you know, "Liquefied Petroleum Gas at Utility Gas Plants." The American Petroleum Institute has just recently reconstituted its Liquefied Petroleum Gas Committee and has undertaken the task of preparing standards for the storage of liquefied petroleum gas at marine or pipe line terminals, natural gasoline plants, refineries or tank farms. This study is to include fire protection at these different locations and will be of considerable interest.

Summing up this discussion, I repeat that the liquefied petroleum gas dealer's interest in fire safety is as great as his interest in, and value of, his business. For this reason, more and more dealers across the country are realizing this fact and are upgrading their own standards of operation and installing fire protective and safety measures where none has existed in the past.



Presentation of a "Certificate of Merit" for safety is made by Hugh Vaughan, left, United States Fidelity and Guaranty Co., Jackson, Miss., to Curry Holland, vice president of Dixie Gas, Inc., Leland, Miss., and Lewis Graber, president, Dixie Gas, Inc., Marks, Miss., on the occasion of 702,000 accident-less miles in 267 days for that company.

The Outlook For the Future

By Donald M. Hobart*

Vice President and
Director of Research
The Curtis Publishing Co.
Philadelphia

WE ALL realize that changes in weather,* differences in climate, variations in the seasons, force us to change our way of living or our physical equipment to meet the climatic conditions under which we live.

Is it too much to suggest that in our business life we must do the same thing? Our knowledge or judgment of future business climate does not mean that we have to surrender to that climate or accept a change in climate as something which is beyond our control. The business climate under which the national economy, any industry, or any individual company operates at any period of time, must be recognized by intelligent management. But a picture of the future business climate merely indicates what we must do to offset the possible changes which lie ahead. Signs of these possible changes in the business climate do not have to mean either extreme success or extreme failure. They may indicate merely the ease with which sales can be made.

D. M. Hobart

Let us look first at some aspects of the general economic climate for the future insofar as it can be forecast, at some specific phases of the markets for L. P. gas, at some of the longer range factors in our economy.

Business conditions for the rest of 1953 should be good. This seems to be the opinion of the majority of economists and forecasters.

On the whole, it is expected that

*Presented at the 1953 LPGA Annual Convention in Chicago, and abstracted by "Butane-Propane News".

retail sales will be good during the first half of the year and may well average about 2% above 1952 retail sales. Some decline is expected in the production of consumer durable goods. Large stocks of relatively new durable goods are now held by consumers. Prices are beginning to soften in certain spots. Business, generally, should remain on the relatively high plateau where it has been since 1951.

Home building is expected to decline somewhat in 1953, but not much. Some say about 5%. It may decline by the end of the year from about 1.1 million in 1952 to about 900,000. But that is still a great many new houses, and many of them are being built in new suburban and rural developments, some of them beyond the reach of gas main service. In the first quarter of 1953, housing starts were exceptionally high, contrary to the predictions of many economists.

This so-called "new fringe of the city market" which is resulting from the movement of city dwellers to suburban a ndrural areas, offers a new market for L. P. gas. Gas or electricity is predominantly used for cooking by families living in large cities, and these people want the advantage of modern conveniences in their suburban and country homes. While some of these newly developed residential areas are served by city gas mains, those where such service is not available offer an opportunity to the L. P. gas industry. In conjunction with the suburban market is the additional sales opportunity offered by summer cottages and resorts. While this market is limited in size in some localities, it has been developed in some areas to a considerable extent by enterprising L. P. gas dealers.

LPG Economic Climate

Farm income is still high. It is down from its 1947 peak but, even with the forecast 5% decline for 1953, is expected to be higher than it was in 1950.

I have stressed farm income because, as you know, the rural family is an important part of the domestic market for L. P. gas. Farm income is one of the factors affecting the economic climate under which you operate.

You are part of a unique industry, an industry which in 30 years' time has shown remarkable progress and development and one which still has a vast marketing potential.

Starting from scratch in the late 1920's, you turned what might have been a waste product of the petroleum industry into a clean and efficient fuel used extensively in industry and in the home. You marketed 4,100,000,000 gals. of L. P. gas in 1951. It is certain that you have not yet begun to realize on the potential market for your product, a market that is there for you to tap no matter what the business climate in which you will be operating for the remainder of this year or for next year.

Population is increasing. We are a country of 156 million people. Family formations are increasing even though the rate is decreasing. There are now over 40 million U. S. families. There are 45 million households. Suburban and rural areas are expanding, opening up new markets

for you. Income is increasing and the distribution of income is broadening; education is more accessible to the many. Savings are increasing, the already high American standard of living is mounting continually higher. All this means that there will be an opportunity to sell more goods in the future, whatever the temporary hindrances, whatever the economic climate directly ahead of us is to be.

The great challenge of the future to America and to the L. P. gas industry lies in our treatment of the economic climate which we meet in the future. We can adopt the dynamic approach to that climate, an approach which leads to success, or we can follow the static way to failure.

There has been a sharp reversal of economic thinking in many quarters. Consumers have been discovered as the "most uncertain" factors in the economic picture. They change their rates of spending and of saving without any notice. So today the economist is moving closer to the marketing man. To understand the future and to meet the economic climate we must have a more thorough understanding of the consumer and how to use the dynamic forces of marketing, selling and advertising to "manufacture customers" in quantities sufficient to absorb our production.

Consumer Poses Challenge

May I point out to you that the challenge posed by the consumer can entail the main difference between success or failure for you and for your industry. To demonstrate more specifically what is needed and to let you determine how well you are prepared to meet the challenge, may I ask what you are doing to "manufacture customers," to develop and expand your markets.

I spoke of farm income as a part of the prevailing economic climate. I did so for this reason: In 1951 there were about eight million domestic L. P. gas installations. The domestic market for your product is mostly suburban and rural. About 30% of the L. P. gas installations for home cooking are urban; 70% are rural.

What is the situation in that rural market today? Well, some 18.2% of the rural market uses L. P. gas for cooking fuel. Just a trifle smaller part of that market, 16%, uses electricity for cooking. At this point you are about a neck ahead of your chief competition, but that competition is strong and active. The latest available figures show, for instance, that 84% of all farms have electrical power lines within reach.

What of the rest of the rural market for cooking fuel? Wood as the cooking fuel is used in 38.7% of that market; utility gas in 4.5%; coal in 12.3%; liquid and other fuel in about 8.9%. As I see it, L. P. gas has a great market opportunity among some 3,000,000 U. S. farm homes now using wood or coal as cooking fuel. What share of that market you will capture depends on the sales and advertising effort the L. P. gas industry puts into obtaining it. You are going to have to manufacture customers for your product; to convince the rural and suburban people, whose incomes and standard of living have

risen so greatly in recent years, that yours is the product and service they will find most economical, convenient, and satisfactory in their homes.

You have an additional rural market, too, again in competition with other fuels, in the farm tractor. More than 135,000 farm tractors are now operating on L. P. gas, but there are over 3,500,000 tractors in the United States. You have a market to expand in farm operation as well as in the farm home.

You have a continually developing and expanding industrial market for L. P. gas. American industry never stands still. As new products are made and as old ones are made by improved methods, your industrial market grows. The uses of your product in industry are legion, and each year opens new applications and new possibilities.

Some 4 billion gals. yearly of L. P. gas are now being shipped from refinery sources to bottling or bulk storage plants, then to industrial consumers or through dealers to commercial and home users. It takes many tanks and a lot of other equipment to do the job now. It will take many more tanks and much more related equipment if the potential suburban and rural markets for L. P. gas are turned into actual and active markets.

I have indicated in broad terms where some of your primary markets lie. What are your plans for studying these markets? Do you know where your best markets are and in what quantities they can be sold? Do you know your needs in the way of salesmen, dealers, and distributors to sell increased volumes of your products to these markets? Have you an adequate marketing research group in your company so that your management can determine where your markets are, how much they can consume, and what sales aims are possible of accomplishment?

U. S. Largest Market

The United States market is the largest market for merchandise that exists anywhere in the world. Your prospects are scattered in all parts of this huge market. Some families buy much; some buy little or nothing. You must find out where your sales prospects live, in what quantities they can be sold. You must set definite sales objectives for each part of this national market. Only in that way can you expand. You must put your sales and advertising effort against each part of the market in direct relation to that part's ability to purchase your product—to produce sales at a profit.

Many a company has never progressed because it left good markets inadequately covered and never set sales requirements worthy of its best marketing efforts. Once you have located your specific opportunities within the broad general market for L. P. gas, your combined industrial and domestic market—and that market includes householders living beyond gas main service—you must develop a strong sales plan and back it with real sales drive.

Unless you are taking full advantage of the possibilities of advertising and promotion, you are not exerting your full sales strength. It does not matter what the economic climate is, advertising and promotion are essential in them all. They are basic

in the American economy; basic in the successful and profitable operation of your company. They are as necessary in a sellers' market as in a buyers' market. From what indications we have, advertising, selling, and promotion are going to be more than ever necessary this year, and in the immediate future. They bring the public news of manufactured products like yours. They spread information about your products.

Advertising, continued and frequent advertising, has two main objectives. The first is the immediate sale. The object of advertising is always to sell goods, products and services. The second objective of sustained national advertising, and it is of at least equal importance, is to establish a brand name, to manufacture customers, to obtain and hold a franchise in the consumer's mind. By whatever name or phrase a product is called, it means that advertising places the name and product favorably before the consumer, keeps it there, and pushes it to the forefront of his or her mind when the purchase is decided upon—and advertising helps force that decision.

Is the advertising of the L. P. gas industry geared to the sales accomplishment you wish to achieve in 1953 and 1954? Will it do the long-range job later whatever the economic climate? Has it the continuity and frequency which will build preference for your products in consumers' minds and result not only in immediate sales but in so establishing your L. P. gas that those sales will continue at high levels?

Nothing we can foresee for 1953 or the subsequent years would indicate that any relaxation of sales and advertising effort is a good idea. It is never a good idea. The static way of waiting for customers to come and buy a product on which they have not been presold has never brought success to any company. The dynamic method of bringing consumers and products together through strong and consistent selling and advertising effort is what achieves results.

We can put the machinery at our command into full production for the manufacture of new customers through more frequent and more efficient advertising and promotion. Do this intelligently, aggressively, and consistently, and the forecast for the future will be for fair, sunny, and profitable days ahead.

Brunner To Construct New Southern Plant

A contract has been signed by the Brunner Manufacturing Co. for the construction of a new modern factory at Gainesville, Ga.

Ground for this new plant was broken recently by A. G. Zumbrun, Brunner president, and construction is well under way, with plans for the plant's completion and operation expected in the early fall.

Selection of the Gainesville site was made after the Brunner board of directors voted to establish a plant in a Southern location near the greatest potential market for refrigeration and air conditioning equipment. According to Mr. Zumbrun, Gainesville offers excellent truck and railroad transportation to the entire United States and export shipping points are readily accessible.

The new plant, which will be devoted exclusively to the production of the Brunner-Metic refrigerator compressor, will be known and operated as the Brunner Co. and will be operated entirely separately from the Brunner plant at Utica, N. Y.

Expanded Facilities For Master Tank & Welding

Master Tank & Welding Co., Dallas, Texas, fabricators of L. P. gas storage tanks, truck tanks and domestic systems, has completed a new wing on the east side of its plant that adds 1250 sq. ft. of space to its manufacturing facilities. With this addition, the plant now extends across the 36 acre plant site of the company.

The new structure will provide adequate capacity for the manufacture of large storage tanks and pressure vessels for the L. P. gas and refining industries. The new building, 125 ft. x 90 ft. is fire proof, constructed of steel, with concrete floor . It is equipped with two large 50-ft. span bridge cranes, augmented with two 4-ton size Monorail cranes.

Sam Weempe, partner in the company, points out that maximun lighting for the interior of the building is provided by the use of Corulux, plastic type material, in the upper portions of the building. The new unit has 22 ft. of head room and is served by two railway spur tracks.

Mutual Liquid Gas Enters Twentieth Year

Joseph S. Fagan

Who says dreams don't come true?

Almost twenty years ago Joe Fagan, after directing engineering and construction activities in many parts of the country, predicted the great future of L. P. gas both for domestic and industrial uses. Joe visualized the part he would take in this fast-moving industry. His dream began to materialize in 1933 when, with his wife, Esther, he opened a small fuel distributing plant in Southern California. After the first year his business, Mutual Liquid Gas & Equipment Co., grew rapidly, and at the present time Mutual serves some 1500 domestic and industrial accounts along with complete manufacturing facilities for producing a full line of LPG furnaces and torches.

Mr. Fagan states that the future for L. P. gas dealers who will apply sound business principles to their operations and who make every effort to balance winter-summer fuel loads is indeed a rosy one. Industrial uses of LPG help in creating year-round loads. The L. P. gas dealer can strengthen his business by selling fuel, torches and furnaces for melting and heating. In so doing he not only builds additional industrial loads but he further promotes the name of his good dealership, which is reflected by further business in the domestic end as well. Ideal uses for LPG in industry will be found among plumbers, sheet metal men, telephone workers, painters and repairmen of all kinds.

The success of Mutual Liquid Gas & Equipment Co. under the direction of Joe Fagan, its founder and president, is indeed a story of a "dream come true"—a faith in the L. P. gas industry backed up by untiring effort.

Whirlpool Steps Up Consumer Promotion

A compact four-color sales manual presenting a series of logical sales arguments and advantages for the use of Whirlpool automatic gas and electric clothes dryers is being distributed to dealer salesmen by Whirlpool Corp., according to an announcement by John Crouse, sales manager.

For use in customer sales demonstrations, nearly every one of the 27

pages reveals something new about dryers. Information on what clothes can be dryer dried, how an automatic dryer protects health, what dial setting to use for different fabrics and how a clothes dryer can save housewives up to 297 hours of work every year, are included in the booklet.

Each feature of the dryer and what it means to the individual housewife is discussed, and safety features, venting, circulation, construction and dial control operation, are all given special emphasis.

Unique in design and style, the 5½ by 9-in. flip-over booklet has also been distributed to each woman member of the American Gas Association Round Table and every Whirlpool field man. Pages and covers of the booklet are plasticized. One year in the planning stage, it marks another step in Whirlpool's drive to educate consumers on the advantages of using automatic clothes dryers.

Believed to be the first complete guide to the laundering of both synthetic and natural fabrics, "Modern Fabrics and How to Launder Them," is another booklet completed and being distributed.

The result of nearly a year of study and testing by the Whirlpool research laboratories in conjunction with home economist Leone Rutledge Carroll and several other nationally known home specialists, the two-color booklet with full-color cover describes in chart form how to launder the latest synthetic fabrics as well as such familiar natural fibers as cotton, silk and wool.

Present plans are to offer the booklet free to consumers through magazine and newspaper advertising and direct dealer store pick-up. A special distribution effort will also be made to reach all home economists through trade magazine advertising.

Butane Corp. Opens New Plant In Arizona

Formal opening of the new plant of the Butane Corp. was held recently at its location north of Chandler, Ariz., with opening day celebration including refreshments, gifts and prizes.

The modern new plant, situated on the Chandler-Mesa Highway, will house the showroom of gas appliances which the firm distributes in addition to its LPG sales and service.

Formed in 1936 to serve the people of Arizona beyond the gas mains, the Butane Corp.'s move is due to the increase in population and volume of business in the area, according to Virgil Watkins, manager.

New Illinois Plant Will Increase LPG Supply

A new supply of liquefied petroleum gas is announced by the National Petro-Chemicals Corp. from the recent opening of its huge natural gas stripping plant at Tuscola, Ill.

The company will process 400,000,000 cu. ft. per day of natural gas, from which will be extracted 450,000 gals. of butane, isobutane and natural gasoline, temporary storage for which will be provided aboveground in four spheres having a capacity of 900,000 gals.

Storage for propane will be provided in an underground cavern which will hold 6,000,000 gals.

All of the production has been contracted for by the "Philgas" Division of Phillips Petroleum Co.

Delta Tank To Build New Plant

Plans for a new 24,000 sq. ft. plant at Beardstown, Ill., are now under way by Delta Tank Manufacturing

Co., Inc. A standardized steel frame structure fabricated by the Luria Engineering Co. of Bethlehem, Pa., the plant is scheduled for completion by September.

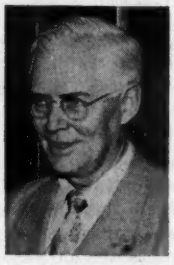
This will be the third manufacturing plant for Delta Tank, who also maintains factories at Baton Rouge, La., and Macon, Ga., and will enable the firm to step up its output of pressure vessels, tanks and cylinders for LPG.

Contract for a masonry air conditioned office building adjacent to the new Beardstown plant has been drawn, and future expansion plans provide for additional buildings in both Beardstown and Macon.

New LPG System Wins Underwriters Approval

A new refined, above-ground, L. P. gas system, manufactured by Master Tank & Welding Co. of Dallas, has been listed by Underwriters Laboratories, Inc., according to Sam Weempe, partner of the company. The refined model tank is produced in 150, 250, 350, 500 and 1000 gallon capacities above-ground domestic systems. The listing covers both butane and propane tanks with working pressures of 125 and 250 pounds.

Geo. D. Roper Corp. Observes 65th Anniversary



Stanley H. Hobson

Sixty-five years of development was observed recently by the Geo. D. Roper Corp. with an open house at the Roper plant which was attended by more than 12,000 people.

Born in 1888 when the founder, George Denny Roper, became interested in gas as a cooking fuel, the company today occupies a half-million square feet of floor space in its plant at Rockford, Ill., which is devoted to the manufacture of gas ranges, rotary pumps and ammunition for U. S. defense. Within the past few months the company has introduced a gas dryer to its line.

A major attraction of the open house commemorating the company's anniversary was a display of Roper ranges, at which cookies were baked and served to visitors.

Following the activities at the plant Stanley H. Hobson, Roper president, entertained the press with a party at his home.

LaFortune Selected For Government Post

J. A. LaFortune, 59, Tulsa, executive vice president of the Warren Petroleum Corp., was sworn in June 23 as the third head of the Petroleum Administration of Defense.

Mr. LaFortune was appointed by Interior Secretary Douglas McKay on the endorsement of the National Petroleum Council's committee on PAD personnel and a broad and representative group of industry leaders.

A native of South Bend, Ind., and an alumnus of Notre Dame, Mr. LaFortune has been vice chairman of Warren Petroleum since 1952. He joined the company in 1924 after experience in the accounting department of Standard Oil Co. (Ind.) at South Bend, in newspaper and periodical advertising, and as assistant secretary of the Mid-Continent Oil and Gas Association. He has made his home in Tulsa since 1919.

Selection of two principal regional managers within the **Liquefied Gas Products Division of A. O. Smith Corp.** is announced by division manager George E. Kemper, whose headquarters are in Houston.

Frank Row, former LPG sales coordinator for the company operating at Houston Works, has been named southern regional manager with headquarters at Houston. **J. P. Parker,** formerly manager of the rural sales division, will manage the northern region from Chicago.

Reassignment and promotion of three plant managers was announced recently by **Rockwell Manufacturing Co.** in preparation for the planned opening of the firm's Sulphur Springs, Texas, plant late this year.

Floyd V. Snodgrass, former general manager of the Nordstrom Valve Division plant at Oakland, Calif., has been appointed to a special administrative post involving supervision of production and operations at Oakland and Sulphur Springs.

Replacing him as general manager at Oakland is **W. D. Willes,** who has been general manager of the company's Barberton, Ohio, plant since September, 1952. **W. T. Gettig,** former works manager of Edward Valves, Inc.—a Rockwell subsidiary—has been named general manager at Barberton.

Allen C. Shippee has been appointed works manager at the Gardner plant of **Florence Stove Co.,** according to an announcement by Robert H. Taylor, president of the firm.

In his new position Mr. Shippee will be in charge of all manufacturing operation at the local plant. He will be responsible to G. B. Colburn, vice president and general manager of the Florence factories in Gardner and Lewisburg, Tenn.

"Little Elpee," a familiar figure in the LPG industry where she stars in **The Bastian-Blessing Co.'s** cartoon strips, is off on a new series of selling ventures, promoting a number of uses for L. P. gas.

Her adventures are chronicled in 32 new cartoons now available in newspaper mat form. Over a period of several years, her appearance in previous cartoons in newspapers, magazines and other advertising media throughout this country and Canada has boosted the sale of ranges, heaters, refrigerators and other LPG appliances.

A catalog of all available mats has been prepared and may be obtained by writing Bastian-Blessing at 4201 W. Peterson Ave., Chicago 30.

The appointment of **C. L. Coleman** and **George H. R. O'Donnell, Jr.** as sales representatives for **The Sprague Meter Co.** was recently announced by F. L. Fairchild, president.

Born in Los Angeles, Mr. Coleman is a mechanical engineer and was formerly with the Casey Bearing Co., the Union Oil Co., and more recently, western representative for the Vulcan Proofing Co. He will cover California, Arizona, Colorado, New Mexico and the Northwest.

Mr. O'Donnell was born in Eugene, Ore., and since the war has been associated with the American-Hawaiian Steamship Co. He will represent The Sprague Meter Co. on the east coast in Virginia, Pennsylvania and New York state.

G. Douglas Davis, Glenview, Ill., has been appointed an assistant sales manager in the "Rego" division of **The Bastian-Blessing Co.** He succeeds Don Sanders, retired.

Mr. Davis is taking over correspondence and customer relations with "Rego" customers in the New England states, in Virginia and eastern Pennsylvania. He will work in the Chicago office. A graduate of the University of Michigan, he was formerly with the commercial equipment engineering department of the Hotpoint Co.

Another new Bastian-Blessing "Rego" employe is **George Workman,** who begins work this month as sales engineer of the Midwestern states. He was formerly representative with A. O. Smith Corp., Chicago.

W. S. Rheem, II

E. C. Bergen

Rheem Manufacturing Co., following the recent acquisition of a new plant in Seattle and two fiber drum firms in California, has promoted **W. S. Rheem II** from western division manager to assistant general manager for the entire company.

Although his headquarters will remain at the South Gate plant of the company, Mr. Rheem's expanded responsibilities will include supervision of all manufacturing and marketing activities in the Southern Division as well as on the West Coast. He will also assist C. V. Coons, vice president and general manager, in administration of all of the company's 12 plants throughout the U. S.

To succeed him as western division manager, the company has appointed **E. C. Bergen,** who has been regional manager of the Rheem plants in Richmond, Calif., area. Mr. Bergen will continue to make his headquarters in Richmond, but is assuming added responsibilities over all the company's West Coast production and sales activities.

E. C. Bergen, a California native and mechanical engineering graduate of the University of California, joined Rheem Manufacturing Co. in 1937 in engineering and maintenance. After wartime serv-

ice in the South Pacific, he rejoined Rheem in 1946 and was promoted successively to plant engineer, production manager, and plant manager at Richmond. He was made regional manager in August of 1952.

The board of directors of the **Southern Heater Co., Inc.,** elected **H. N. Stall** vice president in charge of engineering, and **A. J. Saucier, Jr.,** vice president in charge of Memphis branch operations, at a recent meeting, it was reported by Emmett A. Smith, president. The Southern Heater Co., Inc., operates as manufacturers' agent and wholesale distributor over six states in the south central area, for heating, water heating, and air conditioning equipment.

William W. Pace has been appointed advertising manager of the South Wind division of **Stewart-Warner Corp.,** William V. Ryan, general sales manager of the division, has announced.

A graduate of Butler University, Pace had been editor and business manager of the "North Side Topics," a north Indianapolis community newspaper, before joining Stewart-Warner. He will handle all media advertising in connection with the merchandising activities of the South Wind division throughout the country, Ryan said.

Ray E. Fry

Roy H. Gafford, manager **Bagwell-General Steel Co.,** Sapulpa, Okla., has announced the appointment of **Ray E. Fry** as sales representative of the company for northern Kansas, northern Missouri, Iowa and Nebraska. For the past two years Mr. Fry has been an officer in the air force. From 1946 to 1951 he was connected with Black, Sivalls & Bryson in a sales capacity. He will make his headquarters in Kansas City.

O. V. Brooks is sales representative of Bagwell-General Steel in Oklahoma, south Missouri, western Arkansas and southern Kansas.

CORRECTION

Due to an error, the address for the Duo-Therm Division, Motor Wheel Corp., was incorrectly listed in the index of the 1953 BPN Catalog published by BUTANE-PROPANE News.

The correct address for this company is:

Duo-Therm Division
Motor Wheel Corp.
East Saginaw St.
Lansing 3, Mich.

The Tappan Stove Co. has made two changes in its sales organization, A. B. Ritzenthaler, vice president in charge of sales, announced recently.

D. H. Prion has been named to represent Tappan in the Nebraska sales territory formerly covered by **R. O. Glasener.** Mr. Glasener has been transferred to the Iowa territory.

Mr. Prion came to Tappan in 1940 as an inspector in the range assembly department. In 1952 he entered the sales organization as

a correspondent. Mr. Glasener joined the company in 1948 and became Nebraska representative in March, 1949.

W. B. Evans, president of **Temco, Inc.**, Nashville, Tenn., has announced the appointment of **William H. Ferriss** as advertising manager.

He assumed his duties at Temco on July 15. As advertising manager he replaces Marvin Smith who has resigned because of ill health.

The Trane Co., manufacturers of air conditioning, heating and ventilating equipment, has announced that the Chattanooga, Tenn. sales office has been moved to 308 South Kelley St.

Jack F. Spears is the sales engineer in charge of the office.

Mark Anton, president of **Suburban Propane Gas Corp.**, of Whippany, N. J., has announced the promotion of **J. Fred Walters** from assistant division manager to manager of Suburban-Rulane Division, Charlotte, N. C. **F. M. Mecouch,** director of operations, was promoted to assistant division manager in charge of operations.

Walters joined Suburban as assistant division manager when this company purchased the Rulane Gas Co. of Charlotte, N. C., in December, 1951. Having started as office manager for the predecessor company in 1938, Walters was an officer and director at the time of the purchase.

J. E. Ketner

J. E. Ketner, sales manager for the **Delta Tank Manufacturing Co., Inc.,** has been appointed vice president in charge of sales for the company's plants in Baton Rouge, La.; Macon, Ga., and Beardstown, Ill., according to an announcement by Hal S. Phillips, president of Delta.

Mr. Ketner joined Delta in 1946 as sales representative, moving to the home office as sales manager in 1948. Prior to his army service in World War II, he was with the Dallas Gas Co. and the Arkansas-Louisiana Power Co. Mr. Ketner is well known throughout the natural and L. P. gas fields, having served on committees and boards of the respective associations.

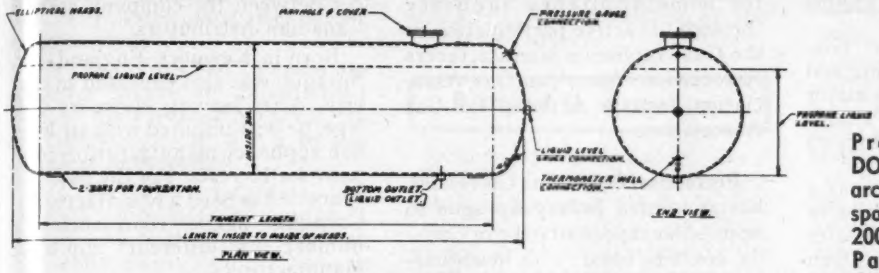
The announcement of his appointment as vice president followed closely his election to the board of directors of the General Gas Corp. of Louisiana and Mississippi.

Everett W. Johnson has been named eastern Iowa district sales manager by **Century Engineering Corp.** The appointment was announced recently by W. S. Moellering, general sales manager.

Mr. Johnson, former heating and sales engineer with Sears Roebuck and Co. in Cedar Rapids, will make his headquarters in Cedar Rapids. His district includes eastern Iowa and western Illinois.

Consolidation of all advertising and sales promotion activities under the direction of **Tom Gibbons,** is announced by C. L. Burrows, vice president in charge of sales of **The Coleman Co., Inc.,** manufac-

PROPANE STORAGE TANKS by DOWNINGTOWN



18000 GAL TANK.	TANK DIMENSIONS	30000 GAL. TANK
15480	GROSS CAPACITY U. S. GALLONS	25800
200	APPROX. PROPANE CAPACITY GAL. (86% OF GROSS)	200
94"	WORKING PRESSURE A.S.M.E. PAR. U-69 CODE	106"
47'-4"	INSIDE DIAMETER, INCHES	62'-6"
51'-3"	TANGENT LENGTH	66'-11"
25.4	LENGTH INSIDE TO INSIDE OF HEADS	41.3
	WEIGHT TONS (APPROX.)	

Propane Storage Tanks at DOWNINGTOWN are electric arc welded construction; welds spot checked with x-ray for 200# W.P., in accordance with Paragraph U-69 of A.S.M.E. Code for Unfired Pressure Vessels — Hydrostatic tested at 400# W.P. or 250# W.P. according to Paragraph U-201 of A.S.M.E. Code and the A.P.I. — A.S.M.E. Code. Construction meets Codes as specified above, National Board of Fire Underwriters and other approval agencies' requirements. We'll be glad to comply with your request for further details.

DOWNINGTOWN IRON WORKS INC.

DOWNINGTOWN IRON WORKS, INC.

DOWNINGTOWN-PENNA.

DIVISION OF PRESSED STEEL TANK COMPANY

Hackney

STEEL AND ALLOY PLATE FABRICATION AND HEAT EXCHANGERS

PROPANE TRUCK TANKS

FOR ALL DELIVERY NEEDS

In streamline (illustrated) and walkway types, 1,181 gal. to 1,700 gal. water capacities. Constructed in accordance with A.S.M.E. Code, par. U-69, 200# w.p., or A.S.M.E. Code, 1950 edition, 250# w.p. Mounted on your chassis complete with valves, fittings, pump, hoses. Unit ready for immediate use when picked up. Write for details.

Also 500 gal. and 1,000 gal. Domestic Tanks (Salem System)

Storage Tanks Up to 8,000 gals.

McNAMAR AND CROWLEY

McNAMAR AND CROWLEY, INC.

SALEM 5, ILLINOIS

tuier of home heating and air conditioning equipment and gasoline appliances.

The appointment of Mr. Gibbons as director of advertising and sales promotion is part of a major expansion of the company's marketing operation, Mr. Burrows said.

A. W. Boyer will continue as a member of the staff and will be in charge of advertising and sales promotion of the company's Open Market products.

Mr. Gibbons is widely known in the home appliance industry through his active participation in the Gas Appliance Manufacturers Association, American Gas Association and the national LP-Gas Association.

Perfection Stove Co., Cleveland, has appointed **Jeffery Sprague** to be its sales representative in Canada, coast to coast, with headquarters in Hamilton, Ont. One of his duties will be to act as liaison officer between the company and its Canadian distributors.

Born in Newport, England, Mr. Sprague was also educated in that city. After leaving Newport College, he was affiliated with an English appliance manufacturing company for 15 years. For the past five years he has been a manufacturers' Canadian agent, representing a number of different appliance manufacturers.

H. E. Kirkpatrick and **Joe E. Ketner** have been elected to the Board of Directors of **General Gas Corp.**, Baton Rouge, La., according to an announcement by R. D. Phillips, president.

The new board members are executive vice president and vice president for sales, respectively, of Delta Tank Manufacturing Co., Inc., major General Gas Corp. subsidiary.

John O. Campbell, Jr., general gasoline superintendent in the production department of **The Carter Oil Co.**, has been placed in charge of a natural gas and gas production section in the crude oil purchasing department. This new section will direct sales of the company's natural gas, natural gasoline, and liquefied petroleum gas.

Dan D. Averyt, who has handled natural gasoline and LPG sales, will continue in charge of these sales under the new section.

Dan W. Cameron is manager of the crude oil purchasing department.

Ray L. Reedy

Announcement has been made by W. Ray Wallace, secretary-treasurer of *Trinity Steel Co., Inc.*, of Dallas, Texas, of the appointment of Ray L. Reedy as general sales manager. Mr. Reedy is well known throughout the LPG industry and brings to Trinity many years of experience in the fabrication field.

The Trane Co., La Crosse, Wis., manufacturer of air conditioning, heating and ventilating equipment, has announced the appointment of **Roy L. Smith** to the Phila-

delphia sales office, and the return of **James J. Callahan** to the Newark, N. J., sales office after a tour of military duty.

Mr. Smith has had 13 years experience in the air conditioning field in the Philadelphia area. He of Technology with a B.S. in mechanical engineering.

Mr. Callahan returns to the Newark office after 24 months of active duty in the Navy. He was originally assigned to Newark after graduating from the Trane engineering class of 1948.

T. A. Byrnes

Gordon J. Duerr

The Imperial Brass Manufacturing Co. has announced the appointment of **Thomas A. Byrnes** to the newly created position of sales manager, eastern division, and the appointment of **Gordon J. Duerr** to the newly created position of sales manager, western and mid-western division.

Mr. Byrnes, who has been with Imperial since 1922, has been representing the company in the New York-New Jersey-eastern Pennsylvania area for many years. Mr. Duerr, with Imperial since 1936, has previously been western sales manager.

R. T. Marshall

R. T. (Dick) Marshall has been appointed sales manager, southern division, for the **Williams Division of Eureka Williams Corp.,** Bloomington, Ill., manufacturer of "Oil-O-Matic", "Gas-O-Matic" and "Air-O-Matic" heating and air conditioning equipment.

Mr. Marshall will maintain headquarters in Dallas, Texas, and his territory will include southern California, New Mexico, Arizona, Texas, Oklahoma, Arkansas, Louisiana, Mississippi, Alabama, South Carolina, Georgia and Florida, it was announced by C. S. Stackpole, vice president of the Williams Division.

Richard D. Armsbury

Richard Dale Armsbury, New Orleans, La., special products manager for Shell Oil Co.'s New Orleans marketing division, passed away while attending the Texas Butane Dealers' convention in Dallas, Texas.

Selwyn Turner

Selwyn Turner, founder of the National Butane Co., Mobile, Ala., and a former president of the Alabama L. P. Gas Association, was killed in an automobile accident near Mobile on June 17.

Active for many years in the national LPGA as well as the Alabama association, Mr. Turner was widely known throughout the industry. He was a prominent member of civic and social groups.

Acres of Diamonds

(Continued from page 61)

that only during the "off-peak" period. The upper, secondary element, usually connected through the regular household meter, can receive current any time its thermostat calls for heat. Since it does this when the stored hot water supply is nearly exhausted, it follows that this element for the most part is in action during the customary hours of hot water usage. There are cases, however, when the upper element will be in operation during the "off-peak" period.

Impossible To Know Costs

Thus in the two-rate system, it becomes impossible to know what hot water cost really is. While the owner can always know the "off-peak" meter reading, he'll never know how much standard-cost energy is used. It's inseparably a part of lighting cost, the cost of running the washer and all the other current costs of household electric equipment.

Advance estimates, given by an optimistic salesman, are misleading. The most practical measurement of electric water heating cost is made when post-installation electric bills are compared with pre-installation bills. Then it's generally too late to do anything about it.

Given a hypothetical case where an average of the two electric rates can be determined and hot water consumption estimated with fair accuracy, comparative energy costs can be reasonably determined.

Electric water heaters, particularly new ones, have a higher thermal efficiency than gas water heaters due to higher heat transfer efficiency, plus a heavier insulation to retard radiation loss. This loss tends to be higher in gas water heaters since its fast heating speed keeps the tank-stored water at top temperature a greater part of the time. But here, as elsewhere, the compensating factor is that the gas heater owner gets hot water where he wants it, not when the water heater is ready to give it. The constantly burning pilot, contrary to general impression, has no particular effect on relative efficiencies since all or nearly all pilot heat is useful in offsetting radiation loss.

A new electric water heater with a

heating element of the immersion type has a heat transfer efficiency of about 95%—and a somewhat lower efficiency when a strap-on element is employed. There are grounds for belief that the efficiency of both types of elements decreases with use. Strap-on proponents claim that the immersion-type element is unfavorably affected by lime deposits from hard water. But so far as known, no dependable figures on electric element efficiency deterioration have been determined.

Gas water heater burners that are kept reasonably free from dirt and lint accumulations do not lose efficiency regardless of use or age. Lowest gas water thermal efficiency recognized by the American Gas Association is 70%; many designs range up to 75%.

"Energy-Ratio"

The term "energy-ratio" is sometimes used to describe the comparative number of Btu required by gas and electric water heaters to heat a given quantity of water. This gas and electric ratio may run as high as 2 to 1 where small quantities of water are heated, as low as 1.6 to 1 where quantities are greater. The reason: effect of radiation losses are lower as hot water usage is increased. Some tests with *new* gas and electric water heaters of standard sizes and inputs, and with average domestic hot water consumption have had a ratio as high as 1.8 to 1. More practical tests with water heaters that have been in use would very probably reduce the ratio.

But if you wish for comparative purposes to use the 1.8 to 1 ratio, and assuming the average unit cost of the two methods can be determined for the subject case, it's possible to make a cost comparison of a sort.

Divide 21,500/lb. by 3413 Btu per KWH. Divide the result by an assumed 1.8 to 1 energy ratio, and you will have a multiplier which when applied to the *average* electric rate will give you an equivalent per-pound propane rate. The answer in this case is 3.5 which means that an average 2-cent/KWH electric rate is the equivalent of a 7-cent/lb. or 30-cent-per-gallon propane price. Similar calculations of L. P. gas with different Btu contents can be made.

So, if it's necessary to use comparative cost figures to make the L. P. gas water heater sales, use them—but

never let your prospect forget for one second, these sales-making facts:

1. Gas heats water fast—three times or more faster than electricity—three or more times as many gallons-per-hour. The small L. P. gas water heater does a better job than a large electric water heater. The LPG water heater owner gets hot water on time, all the time.
2. The L. P. gas water heater has flexibility to adapt itself quickly to changing household conditions—emergencies, sickness, extra guests, special selective temperatures and the like—whereas the hot water supply of the electric water heater is definitely restricted.
3. Increased hot water quantities and temperatures* required by modern automatic clothes washers and dish washers have hurried the obsolesence of many undersized electric water heaters now installed. These new needs help your competitive sales position, too, for only the jumbo-size electric unit can hope to supply the automatic washer.
4. Since the prospect needs a larger electric water heater to do the same job as a smaller LPG water heater, it follows that his first cost (appliance cost) will be greater, particularly if the water heater is equipped with a rust-proof tank.
5. An L. P. gas water heater needs practically no maintenance; upkeep costs are lower than those of the electric water heater.

Service Story Is Clincher

Most people buy things not for what they cost but for what they will do—*for them.* If this were not true, we'd still heat the house with a wood fire, cook the dinner in a fireplace and take a bath once a year.

People want service. The melody of good service lingers on long after price is forgotten.

Make your L. P. gas water heater sales story one of perfect hot water service. Have comparative cost figures ready for use if needed, but make the prospect want the service superiorities of LPG over other water heating methods and *you can't lose!*

*See pages 11-20 inclusive of "All About Modern Home Laundering," published by the Ruud Manufacturing Co., Pittsburgh 1, Pa.

Safety Answers

(Continued from page 71)

combustion in different parts of the burner may result. There is also the possibility that the customer may attempt to adjust the orifice, which could result in improper combustion.

Problem 7. Any person who is either not accustomed to the use of gas room heaters, or those who, due to extreme youth, age, or physical incapacity, may not know how, or may not be able to make such adjustments to either the room ventilation or the burner valves as are necessary to remain safe in a room in which products of combustion are being discharged. You take it from there. We do not know about your local regulations. Do you? You should. And whether or not you have local regulations on this matter, the only safe procedure is to follow Pamphlet 1.

Problem 8. With either thermostatic or remote control, the customer cannot be at the burner to determine that ignition takes place when it should. The only safe procedure is to have all gas going into the appliance shut off in the event of pilot failure.

Problem 9. (a) A manual shut-off valve should be placed between the pilot and the automatic control valve of the main burner. (b) A manual shut-off valve should be placed ahead of both the pilot and the main burner control valve, and another should be included in the system (generally built into the control mechanism) which permits the main burner supply to be shut off independently of the pilot. A pipe union should be provided downstream from the main manual shut-off valve to permit removal of the controls for service or replacement. (See Section 10 (a), (b) and (c).)

Short Course School For Anhydrous Ammonia

A short course devoted to the off-season application of Anhydrous Ammonia was held July 9-10 at the University of Missouri, Columbia, Mo., and sponsored by the Agricultural Ammonia Institute, Memphis, Tenn.

The two-day school covered latest developments, and presented discussions of actual experiences with pictures of results accomplished.

Mrs. Dorothy H. Symons, president, General Water Corp., and L. Bruce Grannis, left, company executive, together with R. T. Jordan, right, president, Palm Manufacturing Co., this week announced that General has acquired control of Palm.

General Water Heater Buys Palm Manufacturing

Mrs. Dorothy H. Symons, president of the General Water Heater Corp., Burbank, California, today announced the acquisition of the Palm Manufacturing Co., San Mateo, through the purchase of stock.

Palm, makers of Sierra circulating air wall heaters, will also manufacture a special quality heater for distribution through the sales organization of General, prominent manufacturers of natural gas and LPG water heaters in the West.

L. Bruce Grannis, General executive who handled all negotiations for the purchase, stated that the projected sale of wall heaters for the coming year is in excess of $1,900,000.

"The purchase of Palm Manufacturing, which now becomes a division of General, is the first step in our long-range program of product diversification for General Water Heater," Grannis declared. "The combined companies now employ approximately 300 people, and plans for future expansion are now under consideration."

R. T. Jordon, president of Palm, will remain in that capacity, and no change in policy is planned for the company.

Cylinder Statistics Released By Government

The following statistics on L. P. gas cylinder production for the one-year period from May 15, 1952 through May 14, 1953, have been released by the U. S. Bureau of Explosives:

Specification 4BA and 4B-240 Psi (volume in lbs. water capacity)

(a)	45 lb. to 60 lb.	227,109
(b)	135 lb. to 150 lb.	29,355
(c)	230 lb. to 250 lb.	798,351
(d)	340 lb. to 500 lb.	21,220
(e)	680 lb. to 1000 lb.	25,240
(f)	All other sizes	22,271

Production figures on L. P. gas tank fabrication covering the first three months of 1953 have been compiled by LPGA's Market Research Committee. They are as follows:

Size	Production
0 - 99 gals.	2,893
100 - 199 gals.	8,015
200 - 299 gals.	12,328
300 - 399 gals.	1,591
400 - 599 gals.	18,418
600 - 899 gals.	250
900 - 1099 gals.	7,022
1100 - 3000 gals.	72
All others	7,326
Total	57,915

Pittsburgh Honors W. F. Rockwell, Jr.

W. F. Rockwell, Jr.

Willard F. Rockwell, Jr., 39-year-old president of Rockwell Manufacturing Co., was elected as one of Pittsburgh's "100 Outstanding Young Men" by a committee of civic leaders recently.

The 100 were chosen on the basis of accomplishments to date in their respective fields as well as their civic contributions and "future promise." To be eligible for selection, a "candidate" had to be under 40 years of age and a resident of Allegheny county, which has a population of about 1,000,000.

Mr. Rockwell was one of 23 men representing industry on the list, which included practically all major fields of human endeavor, with the exception of agriculture.

The 100 were picked from 1,300 nominees turned up in an eight-week canvass sponsored by the Pittsburgh Chamber of Commerce and "Time" magazine. A committee of 25, headed by Dr. J. C. Warner, president of Carnegie Institute of Technology, did the final judging.

Instrument Short-Course To Be Held In California

The Los Angeles Harbor Junior College, Applied Technology Division, in cooperation with the Southern California Meter Association presents the third annual instrument short-course November 19-20 at the college campus at Wilmington, Calif.

Features of the short-course will be lectures and practical demonstration on theory, application and maintenance of industrial and process instrumentation, with exhibits being staged by manufacturers.

Delta Issues New Catalog

A comprehensive, cloth-bound, three-color catalog on their line of products has been issued by Delta Tank Manufacturing Co., Inc. The attractive book provides a ready reference for information and illustrations on Delta's Mix-O-Gas system, LPG systems, storage vessels, cylinders, tanks, tank trucks and transports.

The catalog also contains dimensions, specifications, cut-away photographs and internal sketches of Delta products, as well as application information.

Butane-Propane

POWER SECTION

INSTALLATION • CARBURETION • SERVICING

L. P. gas digs the gravel, loads it into trucks, and hauls it away.
J. Fred Smith Gravel Co. plant, Farmer's Branch, Texas.

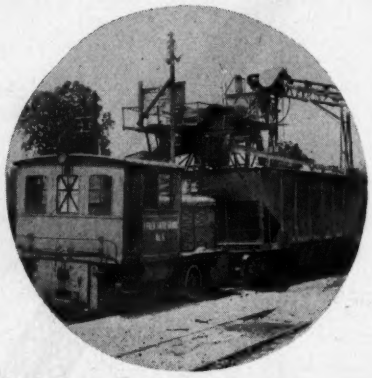
Conversion of Heavy Equipment Digs Operator Out of Hole.

By Carl Abell

BACK in 1948 and 1949 the Northwest Butane Gas Co., of Farmer's Branch, Texas, was fighting a losing fight. Their business was mostly domestic, serving a fringe area on the northwestern outskirts of Dallas. It was not only a bad deal from the load balancing standpoint—average winter/summer ratio of about five to one—but their territory was in the path of natural gas extensions. All the business in an entire neighborhood would be lost as the gas mains reached out into the rapidly developing suburban areas.

Northwest Butane Gas Co. needed new business, and they also needed summer business. The industry leaders were constantly calling attention to the tractor market as the answer to the problem of summer volume. J. B. Wood, then a partner and now sole owner of the business, made a careful survey of the tractor market in their delivery area. He found a considerable tractor population, but the farms were mostly small, and the hours of service per year per tractor limited the prospective conversion customers to a very small number. Tractors were not the answer to their particular problem.

Mr. Wood's early background had been mechanical, so the carburetion idea appealed to him. His next line of investigation was truck fleets. Most trucks operate on a fairly constant year-round basis, so these fleets offered volume, but not load balance. Being in need of volume of any kind that could be obtained, he went to work on the fleet owners, and met the customary objections. The long-haul operators could not be sure of getting fuel out on the road. The local operators balked at putting in the storage and dispensing systems necessary to service their fleets, and buying at service stations cut the differential in fuel cost until it was not very attractive.



Butane-powered locomotive moves the gravel to the crusher, then takes the classified material to the storage dumps.

After a great deal of work, a little fleet business was finally secured. The business was highly satisfactory to Northwest, because the fuel deliveries were steady and the dumps were large. From the standpoint of delivery cost, the business was most attractive. It early became apparent that the fleets with the larger engines were not only the most profitable from the standpoint of volume—they offered the owners the quickest return on the conversion cost.

With this in mind, Wood started looking for larger engines. Almost within ear-shot of his office was the J. Fred Smith sand and gravel plant. A constant stream of dump trucks rolled in and out, with no interruptions except when the weather was too wet to pour concrete. The crusher and screening equipment was run by electricity, but the three cranes and the locomotive operated on gasoline. The owner listened, but his mind harbored an honest doubt. He had never heard of operating a sand and gravel plant on L. P. gas. Furthermore, he objected to spending the money for the carburetors and tanks to conduct an experiment on his operation. And since the cranes and locomotive all carried out coordinated parts of a balanced operation, any time that one of the units stopped, the whole operation stopped.

Wood finally convinced the owner, by presenting facts from other operations, that the use of LPG instead of gasoline would result in less "down time" during the year. After that, the details of the preliminary test were quickly arranged. Northwest Butane supplied the conversion equipment, and made the installation. Wood put on an Ensign carburetor and a 173 gallon tank, and arranged to have his bulk truck deliver fuel right into the tank twice each week. The test was a success—the operator liked the smooth operation, there was plenty of power, and the exhaust

Bucyrus clamshell crane uncovers the gravel bed, excavates, and loads the river-run gravel into cars.

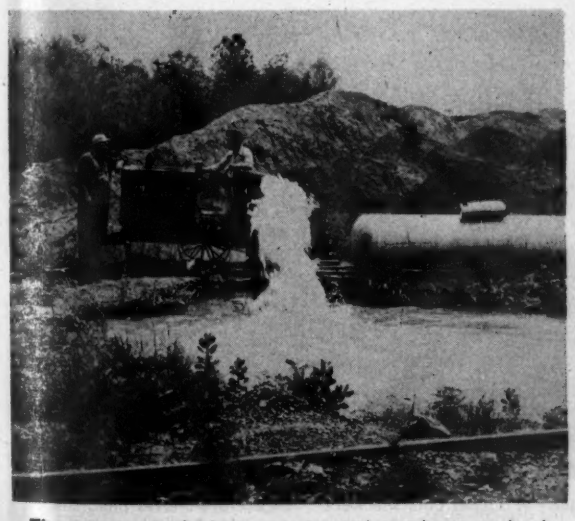
fumes were clean and free from odor. The fuel consumption was nearly the same as it had been with gasoline, and the cost per gallon was less. The engine on which the test was run was practically new, and the lubricating oil remained clean and bright.

The results of the test convinced the customer that it would be wise to convert the rest of the gasoline engines in this plant, and in another gravel operation that he owned at Carrolton, farther up the river. They made a cooperative deal on the conversion equipment. The gravel firm was to supply the carburetion units and make the installations under Wood's supervision. Northwest Butane would supply the tanks, making no charge for their use as long as they supplied the fuel. Northwest was to deliver gas directly into the equipment tanks, never allowing a tank to become empty and cause the plant operation to shut down.

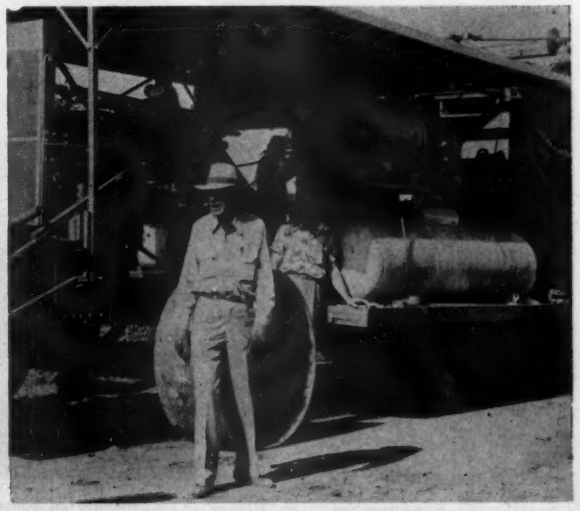
Equipment served at the two gravel plants include two Bucyrus and one P & H cranes with Waukesha engines, one Marion and one Northwest crane equipped with Wisconsin engines, one Buda-equipped Marion crane, one Speed crane with Hercules engine, and a Le Roi powered locomotive. These are all large engines, operating five days per week throughout the year except when bad weather forces them to shut down. In addition, a 45 hp. Le Roi pumping outfit is in service several months each year keeping the excess water out of the Farmer's Branch pit.

Twice each week a full bulk truck load of butane leaves the Northwest plant for the J. Fred Smith gravel pits. In a little over two hours it has discharged its load, and returned to the plant to refill and go on another route. It is a "meal-ticket" account on an impressive scale. Those nine engines consume nearly 120,000 gallons per year—the equivalent of at least 150 domestic customers using LPG for cooking, water heating, and house heating. It provides a balanced seasonal load, and requires much less accounting, billing, and service labor.

The J. Fred Smith Gravel Co. does not yet know how good a bargain they made in converting the engines. They have figures on life of engines and frequency of overhauls for their previous operation on gasoline. The engines were either fairly new or re-



The pump works 24 hours per day to keep the water level from hindering operations in the pit.



This big ditcher has 2542 cubic inch engine, 350 gallon fuel tank. J. B. Wood leans against tank.

cently overhauled before the LPG equipment was installed. None of the engines have reached their first overhaul period since their operation on butane commenced two years ago, but it is apparent that their useful life has been prolonged. How much this will amount to is anybody's guess, as there is no present indication that any engine in the group needs major mechanical attention. In their previous gasoline operation, overhauls would be taking place within the two year period.

Conversion of gravel trucks operating in and out of the Smith plants has been a logical sequence. Fleet conversions totalling 38 trucks have now been completed. These units consume an average of 30 gallons per day each, and they also work throughout the year except during bad weather. This year's gallonage from these 38 trucks will approach a quarter million gallons, with the period of lowest consumption in the middel of the winter.

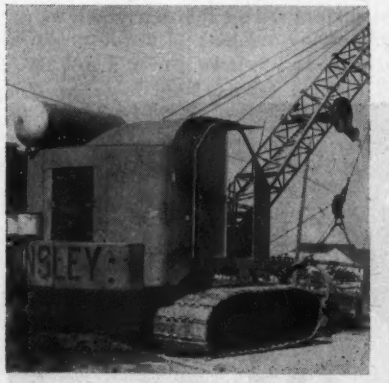
Seeking for more customers with super-colossal engines, Wood found the W. G. Collum Construction Co., of Dallas, and arranged a "fill on the job" deal with them. This involved conversion of heavy ditching equipment, cranes, air compressors, and numerous other power units required for such heavy municipal projects as constructing storm drain systems and laying water supply pipes of large size. The plan agreed upon is similar to the deal with the Smith gravel plants—the customer buys the carburetion units, and Northwest Butane supplies its own tanks, sized to permit economical delivery service. Again, the fuel is delivered directly into the equipment tanks.

Cutting trench 60 inches wide and 20 feet deep, the ditcher piles the back-fill dirt on one side, loads surplus in truck on other side.

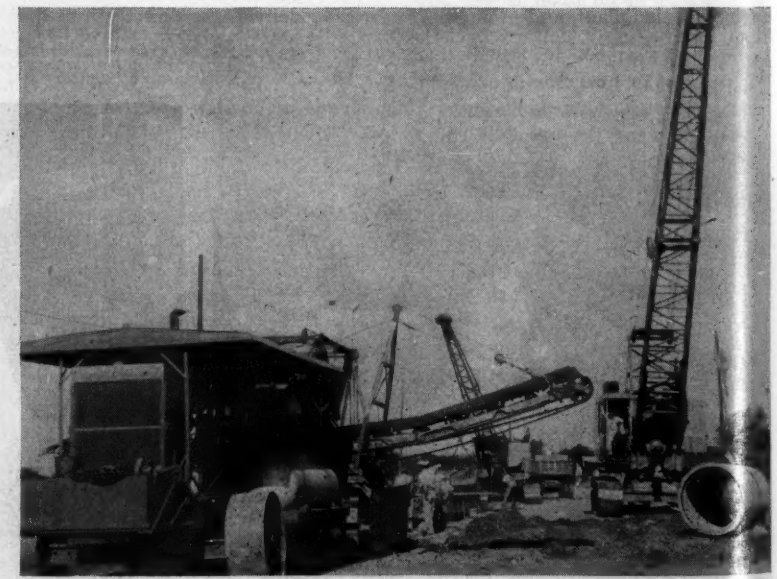
For the Collum equipment engaged in local jobs, the Northwest Butane Gas Co. supplies the fuel. Wood arranges for fuel supply from operators in other localities where the Collum Construction Co. has contracts, with the agreement that any time the equipment is transferred back to the Dallas area, the fuel will again be supplied by Northwest.

The biggest contract now being fulfilled by the W. G. Collum Construction Co. is a 48-inch water main which is being laid in a loop completely surrounding Dallas. This work is progressing at two points, and involves the cutting of a 60-inch trench varying from 12 to 23 feet in depth. Chain type ditchers are used where the composition of the soil is clay or softer material, while wheel type machines are used in shale and soft rock.

The large chain type ditching machines are equipped with 6-cylinder Twin City engines, with bore and



126 gallon tank perches on roof of Insley dragline which fills ditch.



Integrated operation — ditcher cuts the trench, large crane moves pipe, small crane (dragline) fills ditch after pipe sections are joined, truck cleans up. All operate on butane.

ENSIGN Propane Regulating Unit, Carburetor and Filter

FOR ECONOMY OF OPERATION

INTERNATIONAL

CHOOSES ENSIGN LP-GAS CARBURETION

Economy of operation is the principal reason for the swing to LP-Gas as an engine fuel. The new International Harvester Company LP-Gas truck pictured here is powered with an engine designed in every detail for highest efficiency on propane — greatest power, economy and dependability. It isn't likely that I-H-C, after years of laboratory and field tests, would choose anything but the best in carburetion. We are justly proud of their selection of Ensign and shall always do our best to merit this trust.

When *you* choose LP-Gas carburetion for trucks, tractors or buses choose Ensign. You won't go wrong. Ensign is one of the oldest names in carburetion — over 40 years.

Fleet of I-H-C LP-Gas Powered Trucks Ensign Equipped

ENSIGN

CARBURETOR COMPANY

7010 S. Alameda St., P.O. Box 229, Huntington Park, California

HUNTINGTON PARK, CALIFORNIA

CHICAGO 36, ILLINOIS

LOS ANGELES 23, CALIFORNIA

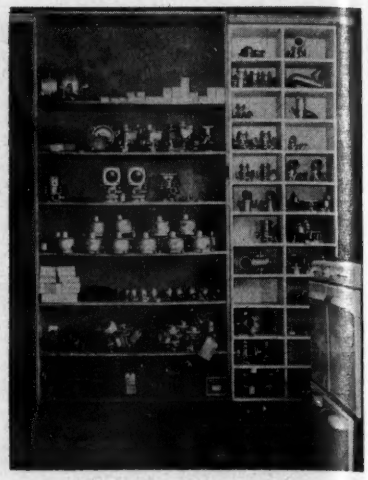
Branch Factory: 2330 W. 58th St., Chicago 36, Illinois

stroke of 8 x 9½ inches, and a total displacement of 2542 cubic inches. These three engines each burn approximately 10 gallons of butane per hour. The two big wheel type ditchers are comparable in power and fuel consumption. The drag-line used for back-filling is equipped with a Chrysler engine, and its normal fuel consumption is about 35 gallons per day. Other converted equipment on the pipe laying job includes a crane for handling the pipe, an air compressor, and several dump trucks for disposing of the excess dirt. This same company is also operating four smaller ditchers, and numerous compressors, trucks, and other pieces of construction equipment, on other jobs. All of these units except a few on diesel have been converted.

To take care of the growing volume of conversion work, Northwest Butane Gas Co. has installed a shop behind its office at Farmer's Branch. This is in charge of an experienced carburetion technician, and work is limited almost exclusively to installation of L. P. gas carburetion units and related work. An impressive stock of carburetors, regulators, tanks, and parts is kept in a special cabinet in the office. An engineering record is kept on each conversion job, so the correct parts can be supplied or specified, no matter where the converted unit may be taken. Present conversion volume ranges from 5 to 15 jobs per month. Up to June, 1953, 112 heavy duty industrial engines had been converted, besides numerous trucks and a few tractors.

The majority of these converted industrial engines are now operating beyond Northwest's delivery range, but enough have remained in the local territory to bring the company's winter/summer load ratio below 1½ to 1, and to increase the total volume for the year in spite of the loss of many domestic customers to the encroaching natural gas lines. This progress is dramatically shown by the sales figures for June and January, which are presented in Table 1. The first carburetion installations were made in the fall of 1949, and the power fuel gallonage has practically doubled each year.

According to Wood, the carburetion activity has not only corrected the unfavorable load balance and offset the loss of domestic gallonage, but it has also opened the way to a substantial increase in steady year-round volume, with larger individual deliveries and lowered delivery costs.



Northwest Butane Gas Co. carries impressive stock of Century and Ensign carburetion equipment and parts, right in the front office.

Table 1.

Comparison of Typical Summer and Winter Deliveries, Northwest Butane Gas Co.

Year	June	January
1948	9,050	37,397
1949	8,592	48,677
1950	14,240	42,930
1951	19,283	55,124
1952	36,180	43,352

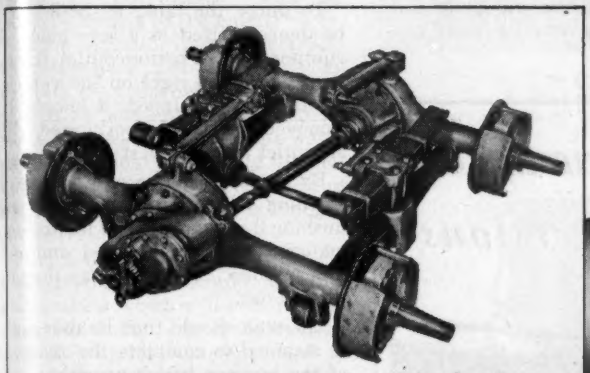
Canadian Plant Purchased By Superior Propane

The assets of Norfolk Propane Limited in Simcoe, Ontario, including bulk storage facilities, has been acquired by Superior Propane Limited of Toronto, it is announced by J. F. F. McQueen, Superior Propane's president.

This makes the fourth in the chain of bulk plants operated by Superior Propane across southern Ontario. The other three plants are located at Maple, Stratford and Carleton Place. Territory served by the company reaches from Lake St. Clair to Ottawa Valley, with showrooms maintained in Stratford, Barrie, Peterborough, Guelph and Belleville and a number of dealers and agents in Ontario.

Acquisition of the Simcoe plant was made for the purpose of meeting the increasing demand for LPG in the tobacco district for curing and steaming and for greenhouse heating.

INTERNATIONAL LEADS 6-WHEELER FIELD



The heart of the 6-wheeler is the bogie

Proved performance

makes the sales leader

your best buy

Performance proved. International RPF-195 ROADLINER with LPG fuel system, GCW rating, 55,000 lbs.

"Tough Job" engineering has made International Trucks the heavy-duty sales leader for 21 years. International 6-wheelers give you proved performance PLUS the famous International bogie with the third differential.

INTERNATIONAL BOGIE ADVANTAGES

The third differential and power divider allow each wheel to rotate independently. There is practically no tire scuffing, "axle fight" or power loss. Perfect matching of tires is unnecessary. Fuel consumption is lower. Under adverse conditions, the third differential can be locked out, giving positive traction to both axles.

Abnormal tire wear eliminated because International bogie design *always* keeps wheels parallel to frame.

Reduces road shock by 50%. "Walking action" design keeps chassis frame and body level while bogie "walks" over obstructions and levels out the road.

Extra strength without extra weight. More payload per pound of chassis weight results from elimination of unnecessary dead weight. Strength is concentrated where needed.

Load stresses equalized. Load is carried from the frame to the axles at *four* points.

Compare performance . . . value . . . and price. Get all the facts on International 6-wheelers—*proved* for top performance and greater operating economy—from your International Dealer or Branch today.

INTERNATIONAL HARVESTER COMPANY · CHICAGO

23 NEW 6-WHEEL MODELS

GVW ratings, 22,000 to 90,000 lbs. Engines from 130 to 356 horsepower. Choice of gasoline or LPG fuel systems. Diesel engines available for models with GVW ratings of 30,000 lbs. and over. Transmissions, axle ratios to meet any requirement. America's Most Complete Truck Line—168 basic models from ½-ton pickups to 90,000 lbs. GVW off-highway models.

International Harvester Builds McCormick Farm Equipment and Farmall Tractors . . . Motor Trucks . . . Industrial Power . . . Refrigerators and Freezers

Better roads mean a better America

INTERNATIONAL TRUCKS

Standard of the Highway

Changing Vapor Withdrawal Systems To Liquid

Permanently mounted tanks which have been used with vapor withdrawal carburetion systems may be used with liquid withdrawal systems, provided that they have, or can be fitted with, liquid withdrawal tubes extending down nearly to the bottom.

When making such a change, it is advisable to purge the tank before trying to use the liquid withdrawal system.

L. P. gas contains small amounts of non-volatile impurities, principally compressor oil in an oxidized or partially oxidized condition, which remain in the tank after the volatile fuel has evaporated. After a few months of use the accumulation of these impurities becomes quite considerable. Being heavier than propane or butane, the impurities lie in the bottom of the tank, where they slosh around with the fuel as the vehicle operates over uneven terrain. The dip tube extends down into the affected area, so if any of these foreign substances are present, they are likely to be carried into the regulator, causing it to become fouled up with sticky masses of material.

To purge the tank, it should first be depressurized in a safe place. If equipped with a bottom outlet, it may then be purged right on the vehicle. If otherwise equipped, it should be removed so it can be positioned with an outlet at the lowest point.

By pouring a gallon of kerosene or cleaning solvent into the tank, and flushing it around, most of the foreign material may be loosened and put into solution. The liquid may then be poured out.

The tank should then be thoroughly steamed to complete the removal of the residue, which sometimes resembles a worm as it is forced through the opening.

The steam leaves moisture in the tank. This should be counteracted by pouring a few ounces of methyl alcohol into the tank, and leaving it there to absorb any traces of moisture which may come in with future fills of fuel.

Mobile fuel supply tanks which have always been used with liquid withdrawal carburetion systems seldom accumulate sufficient foreign material to become troublesome. Being in solution or in suspension in the fuel, the foreign matter tends to travel with the liquid fuel as it is withdrawn. Most of it passes through the regulator valves, and either passes through the engine and is burned, or accumulates in the regulator chambers. These chambers eventually require cleaning, but this is a minor job compared with purging a tank.

Those Baffling Freeze-ups

From time to time we have had reports of regulators freezing up under very baffling conditions. In these particular cases, the freeze-up always occurred shortly after a cold start, but it did not occur with every start. Sometimes operation would be perfectly normal, and at other times a complete freeze-up would occur.

Frank Pilling, of Century Gas Equipment Co., offers the following as a possible solution for some of these baffling cases.

There are a number of engines which are designed with thermostatically controlled by-passes to hold the cooling water in the engine, and re-

circulate it to provide the quickest possible warm-up for the engine. After the operating temperature of the thermostat is reached by the captive water, it is released to circulate through the radiator.

It is quite common practice in these engines to locate the heater hose connections outside the by-pass circuit, so premature operation of the car heater will not interfere with the speedy warming of the engine block. With the regulator unit connected to the heater-hose inlet and outlet connections, the vaporizer does not draw any engine heat until the thermostat opens. The residual heat in the water may be sufficient to vaporize the fuel under light load, but a freeze-up can occur very quickly if fuel is brought through too rapidly.

Pilling suggests as a cure that engines of this type should be fitted with gaskets which will either blank off or drastically restrict the by-pass, thus allowing the transfer of heat to the radiator and to the vaporizer immediately following the starting of the engine.

The quick warm-up feature of these engines is primarily to reduce the amount of unvaporized gasoline going into the cylinders, and thus reduce wear on the engine. With L. P. gas, there is no liquid fuel to wash down the cylinder walls or dilute the lubricating oil, so it is not necessary to continue the precautions which were built into the engine to take care of those situations. It is more important to have the heat where it is needed to insure against freezing of the fuel regulators.

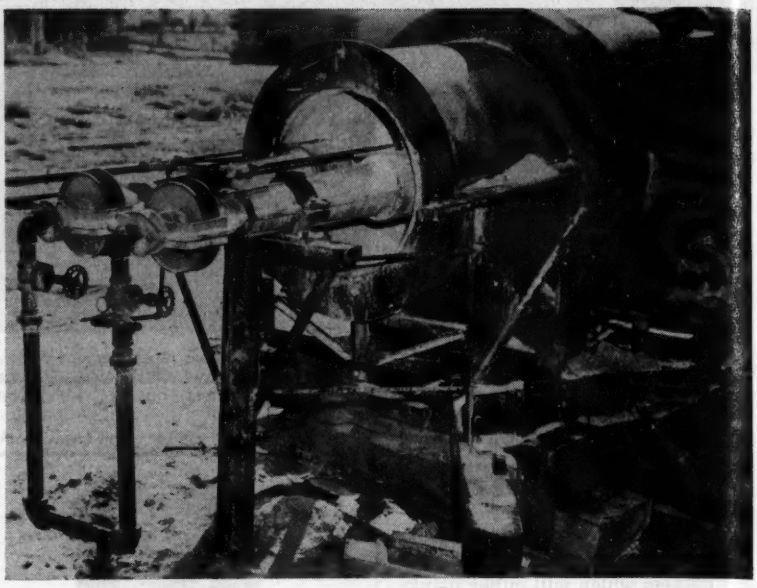
First LPG Tractor In Canadian Territory

In every community there is always a progressive and far-sighted farmer who is the first to note the advantages in design, operation and economy of a new piece of equipment. Such an alert farm operator is N. W. Paul, of Bentley, Alberta, who purchased the first propane tractor in his area—an LPG equipped Model "LA" Case tractor.

According to L. M. Torgerson, branch manager at Calgary, where the tractor was purchased, Mr. Paul has been so satisfied with results from his new equipment that he has been demonstrating it to neighboring dealers and their prospective customers.

In writing to the Case Co. home office recently, Mr. Paul said, "The 'LA's' maintenance cost to date is nil, and its operating cost in the field on LPG is unexcelled."

(Left) One of his most precious possessions is his new Case LPG "LA" tractor, says N. W. Paul of Bentley, Alberta. (Right) Owner Paul and his family. Daughter Mildred (age 11), who drives the tractor in haying time, finds it easy to handle in the field.



Aggregate Mixed and Heated by LPG

L. P. gas finds another use—this time in supplying heat and power to the asphalt aggregate mixing plant of the Lee McLean Construction Co. at Springfield, Mo. Tri-Gas Co., of Springfield, made the installation.

The paving material is mixed in a large drum and flows into the revolving drum shown in Fig. 1 where it is mixed into the finished product under heat generated through the two flame injectors shown pointed into the drum opening. Gas comes from the main line through 3-in. pipe into each jet. The unit burns a peak of 250 gallons an hour when the plant is running at capacity.

Pilot lights are mounted atop each jet, carrying gas from one of the 3-in. lines as shown.

Butane is also used on the big internal combustion engine shown in Fig. 2 which supplies the power needed for not only the aggregate mixing drum but for the heated drum in which the asphalt and aggregate are mixed at 60-lb. pressure. Carburetor and lead arrangement on the big engine are shown in the center

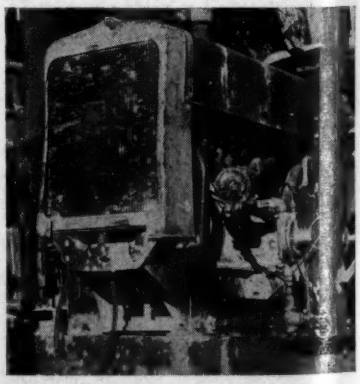


Fig. 2. LPG engine supplies power for mixing drum and for heated drum.

New Florida Terminal For Warren Petroleum Co.

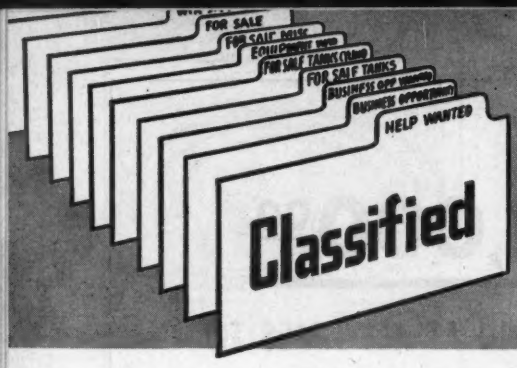
Warren Petroleum will open a new terminal and storage plant for L. P. gas at Tampa, Fla., in the late fall. With an estimated storage for one million gallons, the facilities will involve an investment in excess of $700,000, and deliveries to the new steel storage installation will be made by pressure barge.

LPG Financing Listed

Five distributors of bottled or L. P. gas obtained six long-term loans aggregating $4,900,000 from life insurance companies and other investing institutions in 1952, according to The 1953 Yearbook of Private Placement Financing, published in July by E. V. Hale & Co., Chicago private placement specialists. This represents a considerable drop in dollar volume from 1951, when three companies received four loans aggregating $6,350,000.

An issue of $2,800,000 12-year 4.75% notes of General Gas Corp. and Delta Tank Manufacturing Corp. was the largest in the group; a 4.50% 14-year issue of $1,150,000 notes of Suburban Propane Gas Corp. was next in size. Other companies which obtained private placement financing during the year included Bottled Gas Corp. of Virginia, $300,000 and $50,000; Union L. P. Gas System, $300,000; and Fannin's Gas & Equipment Co., $300,000.

Hycar rubber valves have now been used in over 1,000,000 liquefied petroleum gas regulators manufactured by Fisher Governor Co., Marshalltown, Iowa. Two of these rubber pressure-activated valves are used in each automatic changeover regulator, and they are made by the B. F. Goodrich Chemical Co.



Display-classified advertising rates can be secured by writing publisher. For regular classified advertising, set in 7 point type without border or display, the rate is $1.00 per line per insertion. Count each letter and space between words and allow 46 letters and spaces per line. Minimum charge is $3.00 per insertion. Classified advertising payable in advance. Copy and payment must reach publisher's office prior to fifth of month preceding date of publication.

HELP WANTED

WANTED: MANUFACTURER'S REPRESENTATIVES to sell high-quality old line Gas Boilers, Furnaces, Floor Heaters and Conversion Burners on commission. Men with established trade in non-competitive lines will be considered. We have several choice, protected territories available. You must be aggressive and qualified to handle heating sales. Write Box 255, BUTANE-PROPANE News, 198 South Alvarado St., Los Angeles 57, California.

MANUFACTURER'S REPRESENTATIVE contacting L. P. gas dealers and distributors wanted to handle a bottled gas stock tank heater which is a proven item and free of condensation. Number of good territories are open. Write Box 275, BUTANE-PROPANE News, 198 South Alvarado St., Los Angeles 57, California.

OUR PREFERENCE IS TO WORK WITH experienced L. P. G. men. Write us. Oil Industry Employment Service, 405 Tuloma Bldg., Tulsa, Okla.

YOUNG, AGGRESSIVE SALES TRAINEE for L. P. gas and Anhydrous Ammonia System sales. Free to travel, perferably single. Previous sales experience and knowledge of L. P. gas industry helpful. State complete background and sales experience in application to: General Manager of Sales, The J. B. Beaird Company, Inc., P.O. Box 1115, Shreveport, Louisiana.

SITUATIONS WANTED

INSTALLATION AND SERVICE MAN wants work in Northwest. Several years L. P. experience. Write Box 335, BUTANE-PROPANE News, 198 South Alvarado St., Los Angeles 57, Calif.

BUSINESS OPPORTUNITIES OFFERED

RETAIL BOTTLE AND BULK PLANT priced to sell. Middle-west. Write Box 300, BUTANE-PROPANE News, 198 South Alvarado St., Los Angeles 57, California.

FOR SALE: L.P.G. BULK AND BOTTLE business, located in Kansas, established in 1940. At present grossing owners $1,500.00 monthly on gas sales alone. Business includes two delivery trucks, one pickup, domestic tanks and bottles. All this and including inventory for only $18,000. Some terms available. Write Box 305, BUTANE-PROPANE News, 198 South Alvarado St., Los Angeles 57, California.

ANNOUNCING THE OPENING OF A new service to the L. P. gas industry. Twenty-three years' experience in the business from truck operator to wholesale distributor. We come in contact with many people engaged in the business. Give us your listings—either to buy or sell L. P. gas properties. We have a staff equipped to go anywhere at anytime. All listings treated as confidential. Satisfaction guaranteed. The George Self Agency, Ponca City, Oklahoma.

FOR SALE: RETAIL BOTTLE AND BULK business, 3 trucks, 36,000 gal. storage, about 650 customers, 875,000 gal. yearly; nice location in Kansas. $20,000.00 down. Write Box 315, BUTANE-PROPANE News, 198 South Alvarado St., Los Angeles 57, California.

BUSINESS OPPOR. OFFERED - Cont.

L. P. GAS BUSINESS IN PROSPEROUS town in center of rich Utah valley. 17,000 storage on siding. Two bulk, one bottle truck and sales car. Leased tanks, service equipment, appliance showroom, warehouse. Well established profitable business; annual sales $81,000.00. Price right but substantial down payment required. For particulars write: W. G. Rathmann, 3130 Manchester Blvd., Inglewood, California.

DO YOU WANT TO BUY OR SELL L. P. gas business? We have propane bulk and bottle plants throughout the upper midwest. For years we have specialized in the sale of Petroleum Properties. Petroleum Marketers, 605 Produce Bank Bldg., Minneapolis 3, Minnesota.

PROPANE CASH & CARRY SALES IN heart of Southern California. Largest trailer court colonies. 2500 gal. storage tank, 500 gal. 48 Ford truck, both equipped with Neptune meters and Smith pumps. Located at intersections of two main blvds. Excellent trailer supplies and motor fuel location. Reasonable rent. Priced to sell. Good start for aggressive man. Write Box 345, BUTANE-PROPANE News, 198 S. Alvarado St., Los Angeles 57, Calif.

FOUND—A BUYER
FOR BOTTLED GAS BUSINESS
COST — $5.25

An Ohioan did it with a one-time insertion of a 6-line ad in the classified columns of BUTANE-PROPANE News. He found his buyer among the first eight replies!

FOR SALE: CHANCE OF A LIFETIME. To someone with proven ability, to buy half interest in a well-going L. P. gas business in western Tennessee. 600 bulk, 200 bottle customers, 60,000 gallon storage; gas sales 1952 over 700,000 gallons. Owner bad health. Write Box 340, BUTANE-PROPANE News, 198 South Alvarado St., Los Angeles 57, Calif.

MANUFACTURER'S AGENTS, L. P. GAS distributors, and dealers make money selling Fairfield Stock-O-Matic water fountains. First L. P. gas burning, fully automatic, non-freezing fountain ever offered for pump jacks, pressure systems or gravity flow. Many other special features. Valuable territories and franchises now available. For full details, write or wire FAIRFIELD ENGINEERING CO., Fairfield, Iowa.

ORIGINATOR OF PRACTICAL BUTANE carburetion and patentee of numerous types now in use has new and much improved design. (Pats. Pend.) Will license firm desiring to manufacture and sell. G. L. Holzapfel, 515 E. 15th St., Los Angeles 15, Calif.

SWAPS

TRADE—1947 STUDE. 900 GAL. PROPANE tank, Neptune meter, L.P.G. carburetion, A-1 condition for truck in A-1 condition, 500 - 600 gal. propane capacity. Further particulars if needed. Jack H. Diggins, Beacon Rockgas, Box 11, Felton, California.

BUSINESS OPPORTUNITIES WANTED

WANT TO BUY
a Bulk Plant or
BOTTLED GAS BUSINESS?

A classified ad in BUTANE-PROPANE News will bring quick results at a minimum cost. Box 145 got 28 replies to his $11 ad — less than 40¢ a reply!

FOR SALE — TRUCKS AND TRAILERS

NEW: IMMEDIATE DELIVERY. 1400 WG U69 propane lightweight twin barrel delivery unit. Mounted on new 1953 2-ton, 2-speed Chevrolet truck. Fill and vapor hose assemblies—Viking Mechanical Seal Pump—power take-off assembly. READY TO GO FOR $3845.00 tax paid. Also available at low extra cost: meters—fire extinguisher—motor fuel tank and L. P. carburetion. American Tank & Manufacturing Co., 1936 West Commerce Street, Dallas. Telephone Riverside 9183.

TWO-TON 1946 DODGE TANK TRUCK—1000 WG, meter, pump and 50 ft. hose. Propane carburetor, 40 gal. external tank, two-speed axle. All in good condition; $1500.00. Jackson Appliance, Marshall, Missouri.

NEED A WORKHORSE? WE HAVE NEW 1953 Model 353 GMCs; 2 ton, 2 speed, w/8:25 tires equipped with a 1400 WG Nor-Tex Standard Twin Propane unit. It's skirted, plumbed and perfectly balanced! Complete with recessed fuel tank, Viking KK190 pump with mechanical seal, 50' filler hose, ICC lights and power take-off with spline jack shaft. Finish is aluminum paint over red oxide. Tax paid and ready to go. $4043.80 FOB North Texas Tank Co., Box 519, Phone Central 5416, Denton, Texas.

A PACKAGE UNIT SPECIAL! A NEW 1953 2 ton, 2 speed Chevrolet equipped with a 1250 WG Nor-Tex Standard Twin Propane Unit. It's skirted, plumbed and perfectly balanced! Complete with recessed fuel tank, Viking KK190 pump with mechanical seal, 50' filler hose, ICC lights and power take-off with spline jack shaft. Finish is aluminum paint over red oxide. Tax paid and ready to go $3919.85 FOB North Texas Tank Co., Box 519, Phone Central 5416, Denton, Texas.

1950 F-6 FORD 2-TON TRUCK, NEW MOtor, with 1250 gal. single barrel propane tank. Equipped with 50 GPM mechanical seal Corken pump, fuel tank, filler and vapor hoses. Pittsburgh reset meter, 20# extinguisher, Century carburetion, ready to go. $2,500.00. Far-Gas, Box 454, Enid, Oklahoma, Phone 4666.

SPECIAL: AMERICAN "BETTER-BILT" lightweight 1400 water gallon U69 propane twin barrel delivery unit, with Viking Mechanical Seal Pump—Neptune Print-O-Meter—fill and vapor hose assembly—mounted on new 1953 2-tone, 2-speed GMC, 125 hp engine with 8.25 tires—READY FOR SERVICE. PRICED AT $4475.00 tax paid FOB Dallas. Other sizes available at comparable low cost. American Tank & Manufacturing Co., 1936 W. Commerce Street, Dallas. Telephone Riverside 9183.

Classified

FOR SALE—TRUCKS & TRAILERS-Cont.

LATE 1949 TWO-TON GMC TRUCK, equipped with 9.00 x 20 tires, Smith packless pump, and 1600 gallon water capacity tank. First $2100 takes this, ready to go. Glo Bottle Gas, Mitchell, South Dakota.

FOR SALE — TANKS AND CYLINDERS

AT DEPRECIATED PRICE, 800—60#—4B240 Pressed Steel Tank Company cylinders. City Gas Service, Inc., Wisconsin Rapids, Wisconsin.

CYLINDERS ICC, 4B240. BRAND NEW. 100 lbs. capacity, TW 70 lbs. $13.95, valve extra. Also 20 lb. capacity with Rego valve complete, $9.45. Lower prices for large quantity orders. A complete stock of regulators and fittings for immediate shipment. F. O. B. Cleveland, Ohio. Home Gas Equipment Co., 1301 Carnegie Ave., Cleveland 15, Ohio.

FOR SALE: 200 ICC-4B240 TYPE PROpane cylinders, 150 lb. capacity. See at Skelgas Bottling Plant, Franklin Park, (Chicago) Illinois. $7.75 each in lots of 25 or more. Skelgas Division, Skelly Oil Company, 605 W. 47th St., Kansas City, Mo., attention: J. C. Hastie.

FOR SALE—MISCELLANEOUS

FOR SALE—IMMEDIATE DELIVERY! Eureka Smokehouse Burner Assemblies! For meat smoke houses using bottled gas. Completely automatic. Clean filtered smoke. Distributes heat uniformly. Low gas consumption. Automatic temperature and pilot control. Less product shrinkage. Easily installed. Write for descriptive pamphlet. Eureka Equipment Company, P. O. Box 396, Beloit, Wisconsin.

"STOP THAT LEAK". ITS EASY TO FIND with Leak Detecto Brush. $3.75 ea. Quantity discounts. Solution, 5-gal. $7.50. 1-gal. $1.75. Gas Appliance Stores, Inc. Box 5057, Columbia, S. C.

COPPER TUBING—⅜" OD X .032 WALL —50 ft. coils, lots of 10 or more $4.95 per coil. Less than 10 at 50c per coil. Freight prepaid on 20 or more coils. Home Gas Equipment Co., 1301 Carnegie Ave., Cleveland, Ohio.

ALUMINUM CYLINDER PAINT. EXTRA heavy body, long lasting, 10 minute drying, for spray or brushing. List price $4.30 per gallon. Your cost $2.85 per gallon. Freight prepaid in lots of 20 gallons or more. Finest quality paint you can buy for bulk tanks or cylinders. Home Gas Equipment Co., 1301 Carnegie Ave., Cleveland 15, Ohio.

NEW UNIVERSAL ORIFICES SIMPLIFY range conversions to or from any type gas—butane, propane, natural, mixed or manufactured. Merely insert needle point in valve barrel and screw hood orifice down tight for L. P. gas. To adjust to any other gas just loosen hood and allow more gas into burner. No further changeover ever necessary. Install in new and used ranges not so equipped. Many dealers have welcomed this new practical inexpensive asset to sales and service. Order yours today. Needle points in drill sizes 72-71-70-69-68 for top burners and numbers 56 and 55 for ovens. Universal hoods are drilled to fit. Universal needle points 7½¢ each, universal hoods 6½¢ each. In quantities of 1000 pieces or more needle points 6½¢—hoods 5½¢. Shipped postpaid when check accompanies order, otherwise parcel post C.O.D. Balanced stock costs so little—saves so much. MARSH'S, 3536 Lamar, Memphis 18, Tenn.

SUPERMAN IS ENTIRELY FICTIONAL of course, but for real-life super pumps, write Smith Precision Products Company, 1135 Mission Street, South Pasadena, California. See our display ad on Page 117.

Classified

FOR SALE—MISC. - Cont.

GALVANIZED HOOD, STAND, AND BASE to protect your two cylinder installation; $5.45 each. Packed 10 to a carton. Also Rego or Fisher 2-cylinder regulator, T block, and 2 pigtails at $4.65 each. Sold on satisfaction or money refunded. Home Gas Equipment Co., 1301 Carnegie Ave., Cleveland, Ohio.

15 CAST IRON 100,000 BTU INPUT NATural Gas hot water heating boilers which may be easily converted to L. P. gas. Ridiculously low sacrifice price. Homer Foundry Corporation, Coldwater, Michigan.

PROFESSIONAL SERVICES

LET MY LP EXPERIENCE WITH OVER 100 operating properties increase your profits. Floyd F. Campbell, Management and Sales Consultant, 821 Crofton Ave., Webster Groves 19, Missouri.

MANAGER: MEDIUM SIZED GAS COMpany or group of small properties. Interested in becoming associated with larger operation. Experience covers all phases of general sales management, and general management with manufactured gas utility as well as propane-air plants serving bottled gas beyond the mains. Outstanding record proves ability covering administration of operations and new business. Will have excellent reference. Would be available the latter part of July. George F. Wells Jr., 626 S. Main St., Athens, Pa.

INDIVIDUALLY DESIGNED
BULK PLANTS
H. Emerson Thomas
& Assoc., Inc.
Westfield, N. J.

Short Course On Heating

Some thirty-five men from nine states enrolled for the recent three-day short course at Purdue University, studying how to make better use of liquefied petroleum gas in residential heating.

Prof. W. T. Miller, of Purdue, stressed four factors in heating requirements: the transmission of heat, the infiltration of air, ventilation, and combustion.

Prof. Fred Morse, of Purdue, discussed the effect of humidity, convection, and radiation on body comfort. Ben Speaker, of Lafayette, described the methods used in calculating heat losses in a building.

Other speakers were: Frank Ryder, Stewart-Warner, Indianapolis; Jack Protheroe, Minneapolis-Honeywell, Indianapolis; Chris Nealy, LPGA, Chicago; C. E. Blome, Williams-Wallace Co., Dallas, Texas; Reginald Randall, Coleman Co., Wichita, Kan.; Prof. H. L. Solberg, head of the Mechanical Engineering school, and Prof. John Hicks, agricultural economics, both of Purdue.

States represented by the group are Indiana, Illinois, Ohio, Iowa, Kentucky, Pennsylvania, Wisconsin, Kansas, and Texas.

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